Phoenix Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
1	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
2	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
3	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
4	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
5	PHOENIX	8	0	0	0	0	63,000	16,136	79,136
6	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
7	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
8	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
9	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
10	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
11	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
12	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
13	PHOENIX	8	1	0	0	0	63,000	45,996	108,996
14	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
15	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
16	PHOENIX	7	0	0	0	0	63,000	16,136	79,136
17	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
18	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
19	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
20	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
21	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
22	CAVE CREEK	1	0	0	0	0	63,000	5,468	68,468
23	PEORIA	1	0	0	0	0	63,000	5,468	68,468
24	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
25	PEORIA	1	0	0	0	0	63,000	5,468	68,468
26	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
27	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
28	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
29	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
30	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
31	PEORIA	1	0	0	0	0	63,000	5,468	68,468
32	GLENDALE	3	0	0	0	0	63,000	5,468	68,468
33	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
34	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
35	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
36	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
37	PEORIA	3	0	0	0	0	63,000	5,468	68,468
38	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468
39	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
40	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
41	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
42	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
43	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468
44	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
45	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
46	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
47	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
48	PHOENIX	6	0	0	0	0	63,000	16,136	79,136
49	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
50	SCOTTSDALE	8	0	0	0	0	63,000	16,136	79,136
51	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
52	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
53	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
54	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
55	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
56	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
57	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
58	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
59	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
60	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
61	PHOENIX	1	0	0	0	0	63,000	5,463	68,468
62	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
63	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
64	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
65	PHOENIX	39	0	0	0	0	63,000	47,794	110,794
66	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
67	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
68	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
69	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
70	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
71	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
72	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
73	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
74	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
75	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
76	PEORIA	1	0	0	0	0	63,000	5,468	68,468
77	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
78	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
79	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
80	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
81	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
82	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
83	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
84	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
85	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
86	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
87	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
88	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
89	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
90	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
91	PHEONIX	7	0	0	0	0	63,000	16,136	79,136
92	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
93	SCOTTSDALE	6	0	0	0	0	63,000	16,136	79,136
94	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
95	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
96	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
97	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
98	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
99	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
100	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
101	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
102	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
103	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
104	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
105	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
106	PHOENIX	10	0	0	0	0	63,000	24,204	87,204
107	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
108	PEORIA	1	0	0	0	0	63,000	5,468	68,468
109	PEORIA	1	0	0	0	0	63,000	5,468	68,468
110	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
111	SUN CITY	1	0	0	0	0	63,000	5,468	68,468
112	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
113	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
114	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
115	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
116	SUN CITY	1	0	0	0	0	63,000	5,468	68,468
117	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
118	PHOENIX	38	2	0	0	0	63,000	74,873	137,873
119	SUN CITY	2	0	0	0	0	63,000	5,468	68,468
120	SUN CITY	2	0	0	0	0	63,000	5,468	68,468
121	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
122	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
123	PHOENIX	2	0	0	0	0	63,000	5,468	68,468

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KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
124	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
125	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
126	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
127	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
128	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
129	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
130	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
131	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
132	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
133	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
134	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
135	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
136	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
137	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
138	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
139	SCOTTSDALE	0	1	0	0	0	63,000	44,520	107,520
140	SCOTTSDALE	1	4	0	0	0	63,000	60,150	123,150
141	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
142	PHOENIX	14	0	0	0	0	63,000	23,192	86,192
143	PHOENIX	11	0	0	0	0	63,000	24,204	87,204
144	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
145	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
146	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
147	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
148	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
149	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
150	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
151	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
152	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
153	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
154	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
155	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
156	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
157	SCOTTSDA	3	0	0	0	0	63,000	5,468	68,468
158	PEORIA	3	0	0	0	0	63,000	5,468	68,468
159	PARADISE LLEY	1	0	0	0	0	63,000	5,468	68,468
160	PARADISE VALLEY	2	0	0	0	0	63,000	5,468	68,468
161	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
162	PEORIA	1	0	0	0	0	63,000	5,468	68,468
163	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
164	GLENDALE	1	0	0	0	0	63,000	5,468	68,468

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KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
165	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
166	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
167	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
168	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
169	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
170	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
171	PARADISE VALL	1	0	0	0	0	63,000	5,468	68,468
172	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
173	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
174	GLENDALE	9	1	0	0	0	63,000	46,734	109,734
175	SCOTTSDALE	6	0	0	0	0	63,000	16,136	79,136
176	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
177	GLENDALE	6	0	0	0	0	63,000	16,136	79,136
178	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
179	GLENDALE	4	0	0	0	0	63,000	8,068	71,068
180	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
181	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
182	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
183	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
184	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
185	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
186	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
187	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
188	QUEEN CREEK	1	0	0	0	0	63,000	5,468	68,468
189	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
190	GLENDALE	3	0	0	0	0	63,000	5,468	68,468
191	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
192	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
193	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
194	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
195	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
196	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
197	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
198	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
199	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
200	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
201	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
202	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
203	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
204	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
205	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468

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KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
206	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
207	SCOTTSDALE	10	0	0	0	0	63,000	24,204	87,204
208	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
209	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
210	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
211	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
212	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
213	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
214	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
215	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
216	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
217	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
218	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
219	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
220	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
221	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
222	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
223	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
224	PHOENIX	10	0	0	0	0	63,000	24,204	87,204
225	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
226	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
227	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
228	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
229	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
230	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
231	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
232	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
233	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
234	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
235	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
236	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
237	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
238	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
239	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
240	SCOTTSDALE	5	0	0	0	0	63,000	16,136	79,136
241	MESA	1	0	0	0	0	63,000	5,468	68,468
242	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
243	AVONDALE	1	0	0	0	0	63,000	5,468	68,468
244	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
245	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
246	PHOENIX	1	0	0	0	0	63,000	5,468	68,468

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KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
247	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
248	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
249	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
250	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
251	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
252	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
253	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
254	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
255	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
256	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
257	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
258	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
259	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
260	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
261	MESA	1	0	0	0	0	63,000	5,468	68,468
262	MESA	1	0	0	0	0	63,000	5,468	68,468
263	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
264	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
265	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
266	MESA	2	0	0	0	0	63,000	5,468	68,468
267	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
268	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
269	MESA	1	0	0	0	0	63,000	5,468	68,468
270	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
271	MESA	1	0	0	0	0	63,000	5,468	68,468
272	TEMPE	3	0	0	0	0	63,000	5,468	68,468
273	MESA	3	0	0	0	0	63,000	5,468	68,468
274	MESA	1	0	0	0	0	63,000	5,468	68,468
275	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
276	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
277	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
278	MESA	2	0	0	0	0	63,000	5,468	68,468
279	MESA	3	0	0	0	0	63,000	5,468	68,468
280	GILBERT	1	0	0	0	0	63,000	5,468	68,468
281	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
282	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
283	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
284	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
285	TOLLESON	3	0	0	0	0	63,000	5,468	68,468
286	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
287	MESA	1	0	0	0	0	63,000	5,468	68,468

Phoenix Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
288	MESA	1	0	0	0	0	63,000	5,468	68,468
289	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
290	PHOENIX	8	0	0	0	0	63,000	16,136	79,136
291	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
292	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
293	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
294	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
295	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
296	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
297	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
298	MESA	1	0	0	0	0	63,000	5,468	68,468
299	MESA	1	0	0	0	0	63,000	5,468	68,468
300	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
301	HIGLEY	1	0	0	0	0	63,000	5,468	68,468
302	MESA	2	0	0	0	0	63,000	5,468	68,468
303	MESA	7	1	0	0	0	63,000	45,996	108,996
304	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
305	MESA	3	0	0	0	0	63,000	5,468	68,468
306	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
307	MESA	1	0	0	0	0	63,000	5,468	68,468
308	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
309	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
310	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
311	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
312	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
313	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
314	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
315	MESA	1	0	0	0	0	63,000	5,468	68,468
316	MESA	1	0	0	0	0	63,000	5,468	68,468
317	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
318	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
319	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
320	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
321	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
322	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
323	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
324	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
325	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
326	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
327	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
328	PHOENIX	1	0	0	0	0	63,000	5,468	68,468

Phoenix Fiber Study
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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
329	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
330	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
331	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
332	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
333	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
334	PHOENIX	0	0	1	0	0	63,000	41,820	104,820
335	PHOENIX	171	19	0	0	0	63,000	213,345	276,345
336	PHOENIX	22	0	0	0	0	63,000	24,602	87,602
337	PHOENIX	0	0	0	0	1	63,000	62,021	125,021
338	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
339	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
340	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
341	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
342	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
343	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
344	MESA	1	0	0	0	0	63,000	5,468	68,468
345	TEMPE	2	0	0	0	0	63,000	5,468	68,468
346	TEMPE	1	0	0	0	0	63,000	5,468	68,468
347	TEMPE	1	0	0	0	0	63,000	5,468	68,468
348	TEMPE	2	0	0	0	0	63,000	5,468	68,468
349	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
350	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
351	TEMPE	3	0	0	0	0	63,000	5,468	68,468
352	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
353	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
354	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
355	MESA	2	0	0	0	0	63,000	5,468	68,468
356	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
357	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
358	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
359	MESA	1	0	0	0	0	63,000	5,468	68,468
360	MESA	1	0	0	0	0	63,000	5,468	68,468
361	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
362	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
363	MESA	1	0	0	0	0	63,000	5,468	68,468
364	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
365	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
366	MESA	2	0	0	0	0	63,000	5,468	68,468
367	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
368	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
369	GILBERT	5	0	0	0	0	63,000	16,136	79,136

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
370	MESA	1	0	0	0	0	63,000	5,468	68,468
371	MESA	1	0	0	0	0	63,000	5,468	68,468
372	MESA	1	0	0	0	0	63,000	5,468	68,468
373	MESA	1	0	0	0	0	63,000	5,468	68,468
374	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
375	MESA	4	0	0	0	0	63,000	8,068	71,068
376	MESA	2	0	0	0	0	63,000	5,468	68,468
377	TEMPE	1	0	0	0	0	63,000	5,468	68,468
378	MESA	1	0	0	0	0	63,000	5,468	68,468
379		1	0	0	0	0	63,000	5,468	68,468
380	MESA	2	0	0	0	0	63,000	5,468	68,468
381		1	0	0	0	0	63,000	5,468	68,468
382	MESA	4	0	0	0	0	63,000	8,068	71,068
383		1	0	0	0	0	63,000	5,468	68,468
384	MESA	1	0	0	0	0	63,000	5,468	68,468
385	MESA	1	0	0	0	0	63,000	5,468	68,468
386	MESA	1	0	0	0	0	63,000	5,468	68,468
387	MESA	3	0	0	0	0	63,000	5,468	68,468
388	TEMPE	3	0	0	0	0	63,000	5,468	68,468
389	GILBERT	4	0	0	0	0	63,000	8,068	71,068
390	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
391	TEMPE	8	0	0	0	0	63,000	16,136	79,136
392	GILBERT	2	0	0	0	0	63,000	5,468	68,468
393	TEMPE	2	0	0	0	0	63,000	5,468	68,468
394	TEMPE	5	2	0	0	0	63,000	48,696	111,696
395	GILBERT	1	0	0	0	0	63,000	5,468	68,468
396	GILBERT	1	0	0	0	0	63,000	5,468	68,468
397	TEMPE	2	0	0	0	0	63,000	5,468	68,468
398	GILBERT	1	0	0	0	0	63,000	5,468	68,468
399	TEMPE	7	0	0	0	0	63,000	16,136	79,136
400	TEMPE	3	0	0	0	0	63,000	5,468	68,468
401	GILBERT	1	0	0	0	0	63,000	5,468	68,468
402	GILBERT	1	0	0	0	0	63,000	5,468	68,468
403	GILBERT	3	0	0	0	0	63,000	5,468	68,468
404	GILBERT	1	0	0	0	0	63,000	5,468	68,468
405	TEMPE	3	0	0	0	0	63,000	5,468	68,468
406	TEMPE	4	0	0	0	0	63,000	8,068	71,068
407	TEMPE	1	0	0	0	0	63,000	5,468	68,468
408	TEMPE	2	0	0	0	0	63,000	5,468	68,468
409	GILBERT	4	0	0	0	0	63,000	8,068	71,068
410	GILBERT	1	2	0	0	0	63,000	47,958	110,958

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
411	MESA	1	0	0	0	0	63,000	5,468	68,468
412	MESA	4	0	0	0	0	63,000	8,068	71,068
413	MESA	1	0	0	0	0	63,000	5,468	68,468
414	MESA	4	0	0	0	0	63,000	8,068	71,068
415	GILBERT	4	0	0	0	0	63,000	8,068	71,068
416	PHOENIX	9	0	0	0	0	63,000	24,204	87,204
417	TEMPE	1	0	0	0	0	63,000	5,468	68,468
418	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
419	TEMPE	1	0	0	0	0	63,000	5,468	68,468
420	TEMPE	1	0	0	0	0	63,000	5,468	68,468
421	GILBERT	3	0	0	0	0	63,000	5,468	68,468
422	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
423	CHANDLER	25	1	0	0	0	63,000	49,686	112,686
424	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
425	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
426	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
427	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
428	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
429	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
430	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
431	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
432	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
433	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
434	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
435	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
436	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
437	CHANDLER	21	1	0	0	0	63,000	48,948	111,948
438	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
439	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
440	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
441	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
442	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
443	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
444	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
445	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
446	CHANDLER	24	1	0	0	0	63,000	48,948	111,948
447	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
448	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
449	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
450	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
451	CHANDLER	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
452	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
453	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
454	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
				Sub-Totals			**$28,602,000**	**$3,689,231**	

# in this Study	**3101**	**Sum of Total Cost**	**$32,291,231**
# in this Band	**454**	**Average of Total Cost**	**$71,126**
		% of Addresses in this Band	**14.64%**

PROFILE

POWER ENGINEERS, INC.

PROFILE

POWER ENGINEERS, INC.

POWER Engineers, Inc. (POWER) is a consulting engineering firm headquartered in Idaho with offices located throughout the United States and overseas. Since its beginning 20 years ago, POWER has grown from a staff of three to a firm which now employs over 400. Through growth and diversification, POWER has become a multidisciplinary consulting firm specializing in many technical areas. POWER's full-service capabilities provide integrated services from preliminary planning stages through construction and close-out. Its professional staff includes engineers in the following disciplines:

- Project Management
- **Communications**
- **GIS / GPS**
- Mechanical
- Electrical
- Geotechnical
- Controls
- Combustion
- SCADA
- Structural / Architectural
- Civil
- Chemical
- Petroleum
- Mining
- Environmental
- Thermography
- **Training Development / Delivery**

Staff and/or field office locations include:

- Phoenix, AZ
- Denver, CO
- Atlanta, GA
- Boise, ID
- Hailey, ID
- St. Louis, MO
- Mindanao, The Philippines
- Portland, OR
- Austin, TX

POWER has been recognized as one of the top ten engineering consulting firms in the country by trade publications, i.e., "*Consulting - Specifying Engineer*", etc.

POWER Engineers, Inc.

ICS DIVISION

LINES OF BUSINESS

* TELEPHONY
  - Traditional Outside Plant Planning & Design (Copper, Fiber, SLE, etc.)
  - Data Base Administration
  - Records Management

* BROADBAND PLANNING & DESIGN
  - Video & Data Transport Systems
  - Energy Management Systems (Distribution & Substation)

* RF / CELLULAR / PCS
  - Design
  - Site Acquisition

* SYSTEMS DESIGN
  - Inside Plant Design & Engineering
  - LAN/WAN Networks
  - SONET

* GIS / GPS SERVICES
  - Conversion
  - Analysis
  - Application Development

* TRAINING DEVELOPMENT & DELIVERY
  - Instructional Design (Job Studies, Needs Assessment, etc.)
  - Interactive Multimedia
  - Computer Based Training (CBT)
  - Electronic Support Systems
  - OSP Engineering Training (Instructors)
  - Construction / I & M Training (Instructors)

* ETC.

POWER Engineers, Inc.

ICS DIVISION

REPRESENTATIVE CLIENT LIST

- AT & T
- CENTRAL & SOUTH WEST UTILITIES
- CITIZENS TELEPHONE (& UTILITY)
- COX COMMUNICATIONS
- CUSTER TELEPHONE (INDEPENDENT)
- FIBERLINK
- JONES LIGHTWAVE
- LUCENT TECHNOLOGIES
- MCI
- MICRON
- R & L ELECTRONICS
- TCI
- U S GOVERNMENT (GEOLOGICAL SURVEY)
- U S SPRINT COMMUNICATIONS CO.
- U S WEST COMMUNICATIONS

IX.

QUALIFICATIONS OF POWER ENGINEERS, INC.

POWER Engineers, Inc. is a company qualified to complete engineering, and related, work in the communications environment. The communications engineering division is also supported with expertise in all the professional engineering disciplines and a complete, state of the art GIS operation.

The following pages describe POWER in terms of a brief profile, communications lines of business, and a representative client list.

ATTACHMENT C

ECONOMIC EVALUATION OF HIGH CAPACITY COMPETITION IN PHOENIX

Alfred E. Kahn and Timothy J. Tardiff

EXECUTIVE SUMMARY

U S WEST Communications is requesting, under Section 10 of the Telecommunications Act of 1996, that the Federal Communications Commission forebear from regulating it as a dominant carrier in its sale of high capacity services in the Phoenix metropolitan area. In support of its Petition the Company has asked us to assess its market power in the offer of these services in that area. In performing this analysis, we rely on information about that market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and on our own primary and secondary research on this and related markets.

Following the approach the FCC has previously used to assess market power for other services, we conclude that the market for high capacity services in the Phoenix area fully exhibits the indicia of competition that the Commission has prescribed. In particular, (1) U S WEST has a diminishing market share—indeed, it serves only 30 percent of the retail market—and is barely providing one-half of the facilities that serve new demand; (2) customers are highly sensitive to price and other service characteristics; (3) U S WEST's competitors have the ability to expand their capacity sufficiently to take over a major share of the market currently served by U S WEST and there are minimal barriers to entry; and (4) U S WEST's size does not confer on it an insurmountable competitive advantage.

August 14, 1998

U S WEST's lack of market power signifies that competition itself, without dominant firm regulation, is sufficient to limit its ability to impose anticompetitive prices and other conditions of service. In light of these developments, the costs of maintaining dominant firm regulation in this market clearly exceed whatever benefits continued regulation could possibly confer.

I. INTRODUCTION

U S WEST Communications is requesting, under Section 10 of the Telecommunications Act of 1996, that the Federal Communications Commission forebear from regulating it as a dominant carrier in its sale of high capacity services in the Phoenix metropolitan area. In seeking nondominant status for these services, the Company argues that competitive entry, along with the competition to which it is already subject, is sufficient to constrain its ability to charge prices above competitive levels and, therefore, the costs of continued dominant carrier regulation far outweigh the benefits.

U S WEST has asked us to assess its market power in the offer of these services in Phoenix. In performing this analysis, we rely on information about that market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and our own primary and secondary research on this and related markets. We follow the framework the FCC has used in determining nondominant status in other situations.[1] We conclude that competition in this particular market is sufficiently strong to constrain U S

WEST's ability to control prices and other terms and conditions of service, and that continuing dominant-firm regulation of its high capacity services would be anti-competitive and injurious to consumers.

II. THE FCC'S APPROACH TO MARKET POWER ASSESSMENT

The FCC employs standard economic concepts in its assessment of a firm's market power.[2] It first defines the relevant product and geographic market, taking into account both demand and supply substitution. It then determines whether a firm currently regulated as a dominant carrier still possesses monopoly power within that market, by examining four specific measures:[3] (1) market share, (2) demand elasticity, (3) supply elasticity and (4) the cost structure, size and resources of the putatively dominant firm. We proceed to analyze each of these in turn.

A. Market Definition

Services provided to customers with usage sufficiently great to be economically served with high capacity facilities[4] define the relevant product market.[5] These customers would be

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[1] See, for example, *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, October 12, 1995 ("AT&T nondominance order") and *Policies and Rules for Alternative Incentive Based Regulation of Comsat Corporation*, IB Docket No. 98-60, April 24, 1998.

[2] Cf., e.g., the methods employed by the antitrust agencies for defining markets when analyzing proposed mergers. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, April 2, 1992.

[3] These measures are similar to those described in W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, 1981.

[4] These include DS-1 or higher capacity facilities.

mid-sized to large business end-users,[6] carriers using high capacity transport facilities, and resellers. Services provided over lower-capacity facilities are not in the same product market and are not encompassed by the U S WEST petition: in terms of the familiar standard of the *Merger Guidelines*, customers of these services would not shift their demands to high capacity facilities in response to a "small but significant" increase in the price of their current services, because the monthly cost of hooking them up for that kind of access is as much as six to seven times their current basic monthly charges.[7] Because, for this reason, high-capacity access to large users and low-capacity access to small users are not substitutable on the demand side, the smaller users are in a separate product market.[8]

In terms of supply substitutability, the market clearly embraces all local exchange companies, incumbent and competitive, as well as competitive access providers. There seems no reason to doubt that all of them are capable of providing service to the high-capacity market.

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[5] Over ten years ago, one of us applied a similar analysis to conclude that high capacity services were competitive in New York City. J.A. Hausman, T.J. Tardiff, and H. Ware, "Competition in Telecommunications for Large Users in New York," in National Economic Research Associates, *Telecommunications in a Competitive Environment,* Proceeding of the Third Biennial Telecommunications Conference, Scottsdale, Arizona, April 1989, pp. 1-19. Our study was based on testimony presented to the New York Public Service Commission. At the conclusion of that case, the Commission ordered that, with the implementation of collocation and the unbundling of switching and transport, New York Telephone be granted a wide range of pricing flexibility—the ability to raise rates by 25 percent annually and to lower them to incremental cost—for its high capacity dedicated services. New York Public Service Commission, Proceeding on Motion of the Commission to Review Regulatory Policies for Segments of the Telecommunications Industry Subject to Competition, Case 29469, Opinion No. 89-12, May 16, 1989. While New York was the first city in which local exchange competition took root, competition is more prevalent in Phoenix today than it was in New York when we performed our study.

[6] For ultimate customers, the distinction between mid to large businesses and smaller users corresponds roughly to locations with enough demand to justify a PBX.

[7] U S WEST's current price for a DS-1 facility is about $270 per month.

[8] *Horizontal Merger Guidelines,* Section 1.11.

A practical delineation of the geographic scope of the market for high capacity facilities from the supply side is the metropolitan area. New entrants often announce the availability of their services on this basis. In addition, this tends to be the area within which a provider can expand in a timely fashion to offer services to a growing number of locations. For this particular examination, POWER Engineers (PEI) have shown that competitive local exchange carriers in Phoenix can economically expand to serve almost half of the locations of U S WEST's present high-capacity customers within two years.[9]

B. Market Power Assessment

In this section, we undertake the four assessments performed by the FCC.

1. Market Share

According to Quality Strategies,[10] five competitive providers,[11] all of them with regional or national presence, have entered the high-capacity market in Phoenix since 1994—MFS-WorldCom, TCG, ELI, GST, and MCIMetro. MFS and TCG are the oldest and largest CLECs in the country. With its proposed merger with MCI, MFS-Worldcom would become affiliated

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[9] POWER Engineers, *Phoenix Fiber Study*, Prepared for U S WEST, August 13, 1998. Specifically, PEI estimated the cost of expanding CLEC networks to serve all U S WEST locations within 9,000 feet of those networks. These locations account for approximately 95% of all U S WEST's current high capacity demand in the Phoenix area.

Demand tends likewise to be location-specific. Although the size of the consumer base in the several metropolitan areas of the country (indeed, the world) tends to be responsive to, among other things, the availability and cost of high-tech telecommunications facilities, we would not contend that this source of demand elasticity at any particular location sufficiently constrains possible monopoly power at that location to justify broadening the definition of the market to include suppliers of comparable services elsewhere: we accept the obligation to demonstrate that competitive sources of supply must be sufficiently available, both actually and potentially, in Phoenix itself to justify our support for the U S WEST petition.

[10] High-Capacity Market Study—Phoenix MSA, Prepared for U S WEST, August 7, 1998.

with the second largest long-distance carrier. Similarly, AT&T recently completed its acquisition of TCG, the second largest national CLEC. These transactions involve the merger of the purchasers of approximately half of U S WEST's high capacity services (e.g., carriers purchasing access) in Phoenix with suppliers that compete directly with U S WEST. It would be difficult to conceive of a more substantial consequent diminution of whatever market power that company might previously have enjoyed.

The Quality Strategies report measured market share in a number of ways.[12] In terms of overall high capacity services, U S WEST provides 77 percent of total facilities—whether directly to customers or to other carriers—CLECs the other 23 percent. U S WEST's share is lower than that for facilities provided to end users (72 percent), but higher for IXC transport (84 percent).

What these still-high market shares conceal is the fact that competitors of U S WEST have already taken over the preponderant share of the retail market—both using U S WEST's facilities and, as we will point out, increasingly using their own. In terms of direct sales to retail end users, U S WEST's share of the high-capacity market is below 30 percent, according to this same study.[13]

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[11] For purposes of our discussion, we do not distinguish between competitive local exchange carriers (CLECs) and competitive access providers (CAPs).

[12] Unless otherwise indicated, its estimates are for the fourth quarter of 1997.

[13] A large proportion of U S WEST's high-capacity facilities are provided to other carriers, who then resell the capacity to end use customers. For example, interexchange carriers, such as AT&T, MCI and Sprint, use U S WEST special access facilities when providing certain services to their high-volume customers.

In addition to the level of the current market share of competitive providers, recent changes in that share as well as growth in the market overall[14] are germane to the assessment of market power. Both of these strongly suggest that the Phoenix high capacity market is increasingly competitive. The market overall has been growing recently at about 13 percent annually.[15] Expansion of the CLECs' business has been even more rapid. During the period from the fourth quarter of 1994 to the fourth quarter of 1997, their share of facilities provided to end users increased from 6 percent to 28 percent; and their share of total transport carriage has grown much more dramatically—from 5 to 16 percent in the half-year between the second and fourth quarters of 1997.[16] This means, as a matter of simple arithmetic, that their shares in the *incremental* business in this rapidly growing market must have been much greater than that. According to the Quality Strategies report (p. 15), CLEC facilities are getting 54 percent of the growth in demand of end-users (whether directly or through a reseller), and they are providing 42 percent of the growth in transport with their own facilities.

The strong recent growth in CLEC sales and market share is likely to continue and may even accelerate. While we do not have Company-specific data for Phoenix, CLECs expect to more than double their sales nationally in 1998, with the bulk targeted, as heretofore, at

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[14] In general, the more rapidly a market is growing, the easier entry is likely to be, other factors being equal. See, for example, G.J. Stigler, *The Theory of Price*, Fourth Edition, New York: McMillan, 1987, pp. 209-210.

[15] This rate of growth would produce a doubling of demand in about 5½ years.

[16] These growing shares in a growing market of course imply an even higher growth rate for CLEC volumes. CLEC circuits provided to end users grew by about one-third during 1997, while the CLEC transport volume *almost tripled* in the last half of 1997.

business customers. In fact, during the first quarter of 1998, CLECs added absolutely more new business lines in the U.S. than the RBOCs.[17]

A comparison of the Phoenix market share information with the situation the FCC considered when it granted AT&T nondominant status for interstate long-distance is informative. The FCC reported a market share of about 60 percent for AT&T in 1993.[18] Over the previous five years it had fallen by fewer than 10 percentage points.[19] While AT&T's revenues were essentially flat over the 1988 to 1993 period, the overall market was growing by about 5 percent per year and the revenues for carriers other than AT&T at about 15 percent annually.[20]

This comparison of markets at the time of their respective nondominance investigations thus reveals that while U S WEST's current market share at the wholesale, facilities level is higher than AT&T's at the time when the FCC found it non-dominant, its share at the retail level is much much lower: we doubt there would be economists prepared to refer to a firm with 30 percent of a retail market as "dominant." Moreover, at both wholesale and retail levels, the shares and the volumes of business of U S WEST competitors are growing at a considerably more rapid rate than were those of AT&T's competitors at that time. Since we believe the consensus of economic opinion would be to place greater emphasis on changes in market shares over time and shares in incremental business than their absolute levels, we believe the

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[17] See statement of Heather Gold, *FCC En Banc on State of Local Competition*, January 29, 1998 and Salomon Smith Barney "CLECs Surpass Bells in Net Business Line Additions for the First Time," May 6, 1998.

[18] AT&T nondominance order, par. 40.

[19] Federal Communications Commission, *Trends in Telephone Service*, February 1998, Table 11.1.

[20] *Ibid.*, Table 11.6.

consensus conclusion would be that U S WEST has much the stronger of the two cases for its claim of a lack of market power in the Phoenix high capacity market.

In fact, market shares considerably smaller than that of the CLECs in Phoenix have been considered competitively significant. For example, in its AT&T nondominance order, the FCC adduced in support of its conclusion (par. 62) the fact that long-distance resellers, with a market share of about 12 percent, could attract new customers sufficiently to constrain AT&T's ability to charge supracompetitive prices. Hubbard and Lehr go even further in concluding that these resellers had sufficient market presence to discipline AT&T, MCI and Sprint, combined.[21] Of course, the 1996 Telecommunications Act explicitly promotes this form of competition via its mandatory unbundling and resale provisions.

2. Demand Elasticity

In granting nondominant status to AT&T, the FCC observed that the demands of business customers are highly elastic, because they are sophisticated buyers who typically receive and consider alternative proposals from several vendors.[22] That observation clearly applies at least equally to the segment of the business customer market that purchases high capacity services and facilities—medium to large businesses and other carriers.

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[21] Affidavit of R. Glenn Hubbard and William H. Lehr, on behalf of Western Electric Company, Inc., and American Telephone and Telegraph Company, United States District Court for the District of Columbia, Civ. No. 82-0192 (HHG), filed December 5, 1994, Attachment 1: "An Analysis of Competition in U.S. Long-Distance Telephone Service," pp. 5-6. While we have disagreed with Hubbard and Lehr about the adequacy of competition in the long-distance business in protecting small residential purchasers of long-distance services, we have not disagreed at all about the effectiveness of competition in serving large customers and in appraising the role of resellers in that competition.

[22] AT&T nondominance order, par. 65.

In support of its motion for nondominant status, AT&T submitted an assessment by Professor Michael Porter of the competitiveness of the long-distance market.[23] He found that business customers have considerable negotiating power because of their sophisticated knowledge of telecommunications, their use of network outsourcers and their ability to provide their own networks. These factors are even more powerful in the case of high capacity services, because among the primary users of these services are other carriers that have both the incentive and the ability to drive a hard bargain for good prices and service by threatening to go elsewhere. One need look no further than the alliances between the major IXCs and CLECs (such as Worldcom/MCI/MFS, AT&T and TCG) to observe the ability of these buyers to seek good deals and/or self-provide by shifting their patronage to their affiliated CLECs.[24]

These factors are further reinforced by the already large share of U S WEST's competitors in the *retail* market. It means that even though they rely heavily on U S WEST actually to provide the high capacity facilities that they then resell to ultimate customers, they are not in this market handicapped by the typical inertia of residential customers, their reluctance to drop their familiar, historical supplier and shift to an unfamiliar retail competitor.

As for the elasticity of substitution between the offerings of U S WEST and its challengers, the rapid growth in the latter companies' share of the business speaks eloquently in

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[23] Michael E. Porter, "Competition in the Long-Distance Telecommunications Market," September 1993. The AT&T nondominance order, par. 64, cited this study when concluding that demand elasticity considerations supported the conclusion that AT&T is nondominant in long-distance.

[24] Quality Strategies, pp. 23-24.

support of the expressions of confidence by CLECs, with which the trade press abounds[25]—a confidence confirmed by a disinterested observer:

> CLECs will be hitting their stride as marketing machines during 1998. ...If 1996 was a year of regulatory maneuvering, and 1997 has been a year of preparation, then 1998 will surely be the first year in which CLECs demonstrate their ability to take market share away in a big way.[26]

The CLEC's ability to take market share from incumbent providers is based, in part, on their offering of sophisticated new services that use these high capacity facilities,[27] bundled into a complete offering of telecommunications services. Incidentally, as this last consideration suggests, the CLECs have one great advantage over RBOCs like U S WEST, so long as the latter companies continue to be subject to the prohibition of their offering inter-LATA services, a restriction from which the CLECs are of course free.

3. Supply Elasticity

The analysis of supply elasticity involves an appraisal of (1) the capability of current competitors that are considered nondominant to expand operations to absorb demand currently served by the incumbent carrier and (2) the presence or absence of entry barriers.[28]

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[25] For example, the CEO of Intermedia boasted that "CLECs have proven they can easily take market share from incumbents." *Telco Business Report*, December 8, 1997, pp. 1-3.

[26] *Ibid.*

[27] For example, e spire (formerly ASCI), a CLEC operating in the southeastern United States, recently announced a high capacity product, targeted to small to medium business, which in the words of one of its executives is "the [RBOCs] worst product nightmare." *Telephony*, March 30, 1998, p. 7. While e spire is not operating in Phoenix, the types of products that will be successful in the market are likely to be similar across regions. Successful introduction of a new product by a CLEC in one region can be expected to be imitated by other CLECs in other regions.

[28] AT&T nondominance order, par. 57. The FCC focused on the first of these in its decision, apparently because it considered the capacity of the existing competitors alone sufficient.

a. Ability of existing CLECs to expand

The best indicator of the ability of existing CLECs to expand is the fact that they have in fact done so tremendously, both in Phoenix, as we have already described, and nationwide, as we will describe in the next section. The market itself has demonstrated that it is indeed economically feasible for these firms to capture demand, both new volumes and demand currently served by U S WEST, if that Company's performance failed to meet competitive standards.

The question: if customers wanted to shift from U S WEST in response to a price increase, would existing CLECs find it economical to serve them?—can also be answered hypothetically. The studies performed by Quality Strategies and PEI provide two measures that shed light on the subject. First, Quality Strategies estimated that the existing backbone networks of the five facilities-based Phoenix CLECs have more than *ten times* the capacity needed to accommodate the current demand for U S WEST's high capacity services.[29] Further editorial commentary on the significance of this finding for the question of U S WEST's "dominance" would surely be superfluous.

Of course, customers would have to be linked to one or another of those backbone networks if a CLEC were to serve them. To this end, PEI performed a detailed study of the cost of providing that linkage to U S WEST's customers, at successive distances from the CLEC facilities.[30] It revealed that about one-half of U S WEST's high capacity customer

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[29] Quality Strategies, p. 29.

[30] The cost model developed by PEI is described in detail in its report: it identified routes between customers and the CLEC networks and then estimated the cost of providing fiber optic cable, the associated support structures and electronics over them.

locations are within 1,000 feet (under 0.2 miles) of a CLEC network and to make such connections to all these customers would require an investment of $45 million and would take no more than two years. To serve all locations within 9,000 feet of CLEC networks would require a total of $127 million and no more than five years.

To put these estimates into perspective, we observe that U S WEST's present high capacity customers generate about $50 million of revenue annually in direct charges for the high-capacity facilities—in effect, for the "dial tone" alone. This means that the investment necessary to capture all that current business would be about 2.7 times revenues—a multiple markedly lower than U S WEST's present investment to revenue multiple of 3.2 for Arizona.[31] Under plausible assumptions, the investment ratios required for CLECs to reach customers located within 1,000 feet of their present networks would be even more favorable.[32]

Of course, these investment to revenue comparisons must be viewed in the context of the hypothetical exercise associated with this attempt to assess supply elasticity: would existing CLECs find it economic to expand to serve existing demand if it were to become available. In reality, these CLECs would most likely expand selectively, in an attempt to target high volume/low cost locations. On the one hand, such targeting could introduce some diseconomies, because it would involve serving less than the total volume considered in PEI's calculations, and thereby sacrifice some economies of scale and density.[33] For example, if

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[31] ARMIS data disclose investment (total plant in service) of about $4.31 billion and revenues of about $1.35 billion in 1996.

[32] Almost half of U S West's locations are within 1,000 feet of CLEC backbone networks. These locations account for approximately 86 percent of U S West's high-capacity business (i.e., in terms of DS1 equivalents).

[33] In particular, PEI's study implies three types of scale economies. First, there are cost savings when support structures such as poles and trenches can be shared among several locations. Second, the fiber cable itself is a

CLECs captured only one-half of the volumes at U S WEST's existing locations, the investment to cost ratio for locations within 1,000 feet would be 3.1.[34]

On the other hand, focusing on scale economies sacrificed by targeting customers can only understate the attractiveness of CLECs serving current U S WEST locations, for two reasons. First, because the high capacity market is growing, there will be economies of scale in serving both demand captured from U S WEST and the incremental demand. Second, it is important to recognize that the foregoing revenue figures are the payments by subscribers for the use of the high-capacity facilities only: they are equivalent to the flat monthly fee for "dial tone" service alone. As such, they do not account for the fact that competition is increasingly over a package of services: access to a customer becomes the vehicle for selling services with even higher margins. Taking these net revenues into account would make the comparison of the required investment in high capacity facilities to the revenues it would produce markedly more favorable than is suggested by our previous calculations.

The timeliness with which current competitors can expand their facilities to meet new demand is also important in assessing supply elasticity. In this connection, the estimate that CLECs can serve the 50 percent of current U S WEST-served locations that are within 1,000 feet of CLEC networks in 18 to 24 months is very significant. This two year horizon is consistent with the time frame envisioned in the *Merger Guidelines* in determining whether

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fixed cost for each location, because the same fiber can serve all volumes in the relevant range. Third, there are economies of scale in the electronics, i.e., electronic costs increase less than proportionately as additional volume is added at a location.

[34] We chose the 50 percent assumption on the basis of the observation that CLECs are now capturing about one-half of new volumes. Our ratio assumes that their share would be spread evenly over all locations, so that CLECs would still have to build facilities to all of them.

prospective new investments should be counted as a competitive factor disciplining the pricing behavior of firms contemplating a merger.[35]

Even though taking on customers beyond 1,000 feet would require additional time, the CLECs' ability to do so is competitively significant. As the FCC correctly observed in its AT&T nondominance order,

> The issue, however, is not whether Sprint and MCI could and should expand their networks so they can serve all of AT&T's customers within a short time frame. Rather, the issue is whether, in the short term, Sprint and MCI have sufficient available excess capacity to add a significant number of new customers. The evidence shows that Sprint and MCI can add significant numbers of new customers with their existing capacity and add incrementally to this capacity as new customers are added to their networks.[36]

b. Barriers to entry

The impressive growth of CLECs demonstrates that barriers to local exchange entry are obviously not prohibitive.[37] Although high capacity entry came later to Phoenix than other metropolitan areas, CLECs there appear to be catching up to the pace elsewhere. According to Quality Strategies, two CLECs entered in 1994 (ELI and TCG), MFS in 1995, MCI in 1996, and GST in 1997.[38]

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[35] *Merger Guidelines*, par. 3.2.

[36] Par. 60. The FCC also concluded that resellers could expand capacity in response to supracompetitive pricing by AT&T (par. 62)

[37] Although much of the available data on CLEC growth is at the national level and for all local exchange services, it is clear that these firms are focusing on high capacity services. For example, Heather Gold reported that the CLECs had created "the nation's first digital local networks...in direct response to increased customer needs for broadband capabilities and advanced telecommunications solutions," *op .cit.*

[38] Quality Strategies, pp. 19-22 and p. 25.

Nationally, there has been tremendous growth in the number and size of CLECs. Currently, there are over 100 of them[39] and they are adding customers at an impressive rate. For example, Salomon Smith Barney reported that CLECs added 75,000 new business lines in the fourth quarter of 1996—sixty-four percent of that total by the "Big 2" (TCG and MFS), 20 percent by 12 other smaller, explicitly identified carriers, and the other 16 percent by an unidentified group. By the first quarter of 1998, the total CLEC volume of new lines had increased to about 500,000, with the "Big 2" accounting for only one-third, the next 12 for 50 percent, and the remaining small LECs for the remaining one-sixth[40]—testifying to a marked decrease in concentration even among these challengers of the ILECs. Clearly, the market opportunities for CLECs are not only expanding but expanding disproportionately rapidly for the newer entrants among them.

Similarly, CLECs are having no trouble attracting large amounts of capital. These funds have come both from other carriers in the form of acquisitions and from the capital market. For example, over the past two years, WorldCom acquired two CLECs, MFS and Brooks, for a combined price of $16.4 billion—an amount almost identical to what SBC paid to acquire Pacific Telesis. In the first half of this year alone, AT&T has acquired TCG at a cost of $11 billion and recently announced its intent to acquire TCI at a cost of $48 billion. In the two years since the passage of the Telecommunications Act in 1966, CLECs have raised $14 billion

[39] Heather Gold, *op. cit.*

[40] Salomon Smith Barney, *op. cit.*

of outside capital.[41] In comparison, The most recent data reported to the FCC show total annual investment by the ILECs has been about $18 billion.[42]

In addition, the availability of investment capital has been unequivocally demonstrated. The over $14 billion that CLECs have raised since the passage of the 1966 Act—over a period of less than two years—was six times the amount of capital raised in the four years before its passage.[43]

4. Cost Structure

In the AT&T nondominance order, the FCC was concerned that AT&T's size relative to other carriers might give it a significant advantage in terms of scale economies and access to capital. The same question must be raised in the present context. The record we have already summarized supplies the definitive answer: investors are obviously satisfied that incumbents do not enjoy advantages sufficient to make continuing—indeed growing—investment in CLECs unattractive.

What is both highly satisfying from the standpoint of consumers and reassuring about the continued feasibility and vitality of competitive entry is the fact that this rapid recent expansion of the CLECs has occurred at the same time as the charges by incumbents for high capacity services have declined substantially. When the first CLECs entered in the mid- to late 1980s, these prices were over twice their current levels.[44] That CLEC activity is accelerating at

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[41] Statement of Heather Gold, *op. cit.*

[42] Calculated from data reported in the FCC's *Statistics of Communications Common Carriers.*

[43] Heather Gold, *op. cit.*

[44] For example, U S WEST's rates for DS-1 capacity fell by 43 percent between the end of 1989 and the beginning of 1998.

lower price levels is strong indication that investors are not overly concerned about insurmountable cost advantages of the incumbents.

III. THE COST OF MAINTAINING DOMINANT REGULATION OF U S WEST'S HIGH CAPACITY SERVICES

In the AT&T nondominance order (e.g., par. 32), the FCC describes graphically the large social costs of continued asymmetrical regulation: (1) the longer tariff notices imposed on AT&T dampened its incentives to innovate, because rivals could respond to its innovations even before it could actually offer them; (2) these same filing requirements also dampened the regulated company's incentives to reduce prices; (3) the dominant firm's competitors could use the asymmetrical regulatory process to delay and undermine its initiatives; and (4) regulation imposed administrative costs on both the regulated firm and the FCC.

The dominant firm regulation at issue in these proceedings involves the same kinds of costs—if anything, they are compounded by the fact that CLECs are providing complete bundles of services, including interLATA, while the ILECs cannot respond until such time as their 271 applications are successful. Ironically, these applications are being held up pending demonstration that ILEC local markets are sufficiently open to competition!

The upgrading and modernization of the switched public network and the fullest exploitation of its capability of offering a variety of sophisticated and innovative services—which are the central goals of the Telecommunications Act of 1996—depend not just on freeing the telephone companies and all others from restrictions and handicaps on their ability to do so; it also requires offering all parties the full, undiluted incentives of a free market system to undertake the requisite, typically risky investments.

Those incentives are of two kinds. The first is the stimulus of competition itself. The strongest case for substituting the discipline of competition for that of regulation is the superior ability of the former to exert pressures on all producers to be efficient and innovative, if they are to survive, let alone prosper. Outstanding, unequivocal illustrations are the wholesale adoption of hub and spoke operations and the development of computerized reservations systems by the airlines after their deregulation, and the widespread adoption of just-in-time inventory systems made possible only by the freedom of truckers, conferred by their deregulation, to enter into binding contracts with penalties for failure to perform according to stipulated standards.

The second is the self-interest of the telephone companies, freed from continuing restrictions on the services they are permitted to offer. If they are to undertake the risks of investments in innovation, they must see the prospect of retaining the profits of the ones that turn out successfully, symmetrically with their bearing the full costs of the failures. This requires genuine deregulation.

Particularly during the next several years, when competitors in markets formerly protected by regulation will attempt to enter each other's domains in innovative and even unpredictable ways, it is essential that we not weaken the second of these incentives in a misguided effort to strengthen the first. Attempts to micromanage the process of deregulation, we have found in other industries, are more likely to produce distortions than actually to encourage efficient competition.[45] Ultimately, both incentive systems require the shrinking of

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[45] Alfred E. Kahn, "Applications of Economics to an Imperfect World," the Richard T. Ely lecture, *The American Economic Review, Papers and Proceedings*, Vol. 69, No. 2, May 1979, pp. 1-13.

regulation and of all such regulatory restrictions to the absolute minimum and entrusting protection of the public to deregulated competition—subject, as always, to the constraints of the antitrust laws.[46]

IV. CONCLUSIONS

Following the approach the FCC has previously used to assess market power for other services, we have concluded that the market for high capacity services in the Phoenix area fully exhibits its stipulated indicia of competition. In particular, (1) US WEST has a diminishing market share—indeed, it serves only 30 percent of the retail market— and is barely providing one-half of the facilities that serve new demand; (2) customers are highly sensitive to price and other dimensions of service; (3) US WEST's existing competitors can readily expand their capacity sufficiently to displace it entirely, if it were to attempt to price monopolistically, and, in addition, barriers to entry are minimal; and (4) U S WEST's size gives it no insurmountable advantage.

Indeed, these indicia show intensifying competition, which strongly suggests that if the FCC grants U S WEST's Petition, there is virtually no likelihood that it will ever regain a dominant position that would call for reregulating its high capacity services. On the contrary, the relevant historical precedents indicate that regulators have little to fear from premature relaxation of regulation in these markets. For example, AT&T's market share has continued to decline since it obtained nondominant status in late 1995.[47]

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[46] See Kahn, *Letting Go: Deregulating the Process of Deregulation*, Michigan State University Institute of Public Utilities, 1998.

[47] Federal Communications Commission, *Trends in Telephone Service*, February 1998.

US WEST's lack of market power signifies that competition itself, without dominant firm regulation, is sufficient to restrain the Company's ability to impose anticompetitive prices and other conditions. In light of these developments, the costs of maintaining dominant firm regulation in this market clearly exceed whatever benefits continued regulation could possibly confer.

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He received his Bachelor's and Master's degrees from New York University and a Doctorate in Economics from Yale University. Following service in the Army, he served as Chairman of the Department of Economics at Ripon College, Wisconsin. He moved to the Department of Economics at Cornell University, where he remained until he took leave to assume the Chairmanship of the New York Public Service Commission. During his tenure at Cornell, Professor Kahn served as Chairman of the Department of Economics, member of the Board of Trustees of the University and Dean of the College of Arts and Sciences.

Throughout his career, he has served on a variety of public and private boards and commissions including: the Attorney General's National Committee to Study the Antitrust Laws; the senior staff of the President's Council of Economic Advisors; the Economic Advisory Council of American Telephone & Telegraph Company; the National Academy of Sciences Advisory Review Committee on Sulfur Dioxide Emissions; the Environmental Advisory Committee of the Federal Energy Administration; the Public Advisory Board of the Electric Power Research Institute; the Board of Directors of the New York State Energy Research and Development Authority; the Executive Committee of the National Association of Regulatory Utility Commissioners; the National Commission for Review of Antitrust Laws and Procedures; the New York State Council on Fiscal and Economic Priorities; the Governor of New York's Fact-Finding Panel on Long Island Lighting Company's Nuclear Power Plant at Shoreham, L.I.; the Governor of New York's Advisory Committee on Public Power for Long Island; the National Governing Board of Common Cause; and, in 1990, as Chairman of the International Institute for Applied Systems Analysis Advisory Committee on Price Reform and Competition in the USSR.

He has also served as a court-appointed expert in State of New York v. Kraft General Foods, Inc., et al., U.S. Disctrict Court, S.D.N.Y.; Advisor to New York Governor Carey on Telecommunications Policy; and as a consultant to the Attorneys General of New York, Pennsylvania and Illinois, the Ford Foundation, the National Commission on Food Marketing, Federal Trade Commission, Antitrust Division of the Department of Justice, the U.S. Department of Agriculture and the City of Denver on charging and financing of Stapleton Airport.

He has received L.L.D. honorary degrees from Colby College, Ripon College, Northwestern University, the University of Massachusetts and Colgate University, and an honorary D.H.L. from the State University of New York, Albany; he also received the Distinguished Transportation Research Award of the Transportation Board Forum, The Alumni Achievement Award of New York University, the award of the American Economic Association's Transportation and Public Utilities Group for Outstanding Contributions to Scholarship, The Henry Edward Salzberg Honorary Award from Syracuse University for Outstanding Achievement in the Field of Transportation, the Burton Gordon Feldman Award for Distinguished Public Service from Brandeis University, the Wilbur Cross Medal for outstanding achievement (Yale University), The 1997 L. Welch Pogue Award For Lifetime Contributions to Aviation and the 1997 Sovereign Fund Award Honoring Vision, Commitment and Achievement in the Pursuit of Individual Freedom; and was elected to membership in the American Academy of Arts and Sciences and Vice President of the American Economic Association. He has been a regular commentator on PBS's "The Nightly Business Report."

He has testified before many U.S. Senate and House Committees, the Federal Power Commission, the Federal Energy Regulatory Commission and numerous state regulatory bodies.

His publications include *Great Britain in the World Economy; Fair Competition: The Law and Economics of Antitrust Policy* (co-authored); *Integration and Competition in the Petroleum Industry* (co-authored); *The Economics of Regulation*; and *Letting Go: Deregulating the Process of Deregulation.* He has written numerous articles which have appeared in *The American Economic Review, The Quarterly Journal of Economics, The Journal of Political Economy, Harvard Law Review, Yale Journal on Regulation, Yale Law Journal, Fortune, The Antitrust Bulletin* and *The Economist,* among others.

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TIMOTHY J. TARDIFF

Timothy J. Tardiff is a Vice President in the Cambridge, Massachusetts office of National Economic Research Associates, Inc. (NERA), where he specializes in the economics of the telecommunications industry.

Dr. Tardiff received a B.S. with honors in Mathematics from the California Institute of Technology in Pasadena and a Ph.D. degree in Social Science from the University of California, Irvine, under a National Science Foundation Pre-doctoral Fellowship and an NSF Grant for Improving Dissertation Research in the Social Sciences.

Dr. Tardiff joined the faculties of the Department of Civil Engineering and the Division of Environmental Studies at the University of California, Davis. He taught undergraduate and graduate level courses in transportation and environmental policy analysis. His research included applications of econometric models of consumer choice to transportation planning problems. Dr. Tardiff's research was funded by the National Science Foundation, the Institute of Transportation Studies and the California Department of Transportation.

Prior to joining NERA, Dr. Tardiff's work included transportation, energy, public utility and telephone industry projects for the U.S. Departments of Transportation and Energy, the California Energy Commission, and several telephone and electric utilities.

Since joining NERA, he has evaluated pricing policies for increasingly competitive telecommunications markets, including appropriate mechanisms for pricing access services to competitors; studied actual and potential competition for services provided by telephone operating companies; analyzed the demand and revenue impacts of new telephone rate structures; developed and evaluated damage studies used in major telecommunications antitrust actions; analyzed the market potential for wireless telephone services; evaluated the investment and marketing programs of telephone companies; and developed approaches for measuring incremental costs of telecommunications. Most recently, he has submitted affidavits, reports and testimony in federal and state regulatory proceedings on the implementation of the Telecommunications Act of 1996: including pricing of unbundled elements, universal service reform, carrier access pricing reform, and interLATA entry.

Dr. Tardiff has published extensively in the transportation literature. He has also presented and published papers on the telecommunications industry, which have appeared in publications such as the *American Economic Review*, *Information Economics and Policy*, and as chapters in several books. These papers address the issues of pricing and costing policies for emerging competition in telecommunications markets; evaluating and forecasting the impacts of telephone rate plans such as local measured service; analyzing the markets for new telecommunications products and services; and the development of competition for local exchange services.

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Affidavit

BE IT KNOWN, that Nickie L. R. Duff, the Undersigned, being of legal age, do hereby depose and say under oath as outlined in the attached document, entitled, "Phoenix Cost Study and Model". which is annexed and incorporated herein:

WITNESS my hand under the penalties of perjury this 13th day of August, 1998.

Nickie L R Duff
Signed

Signed

Signed

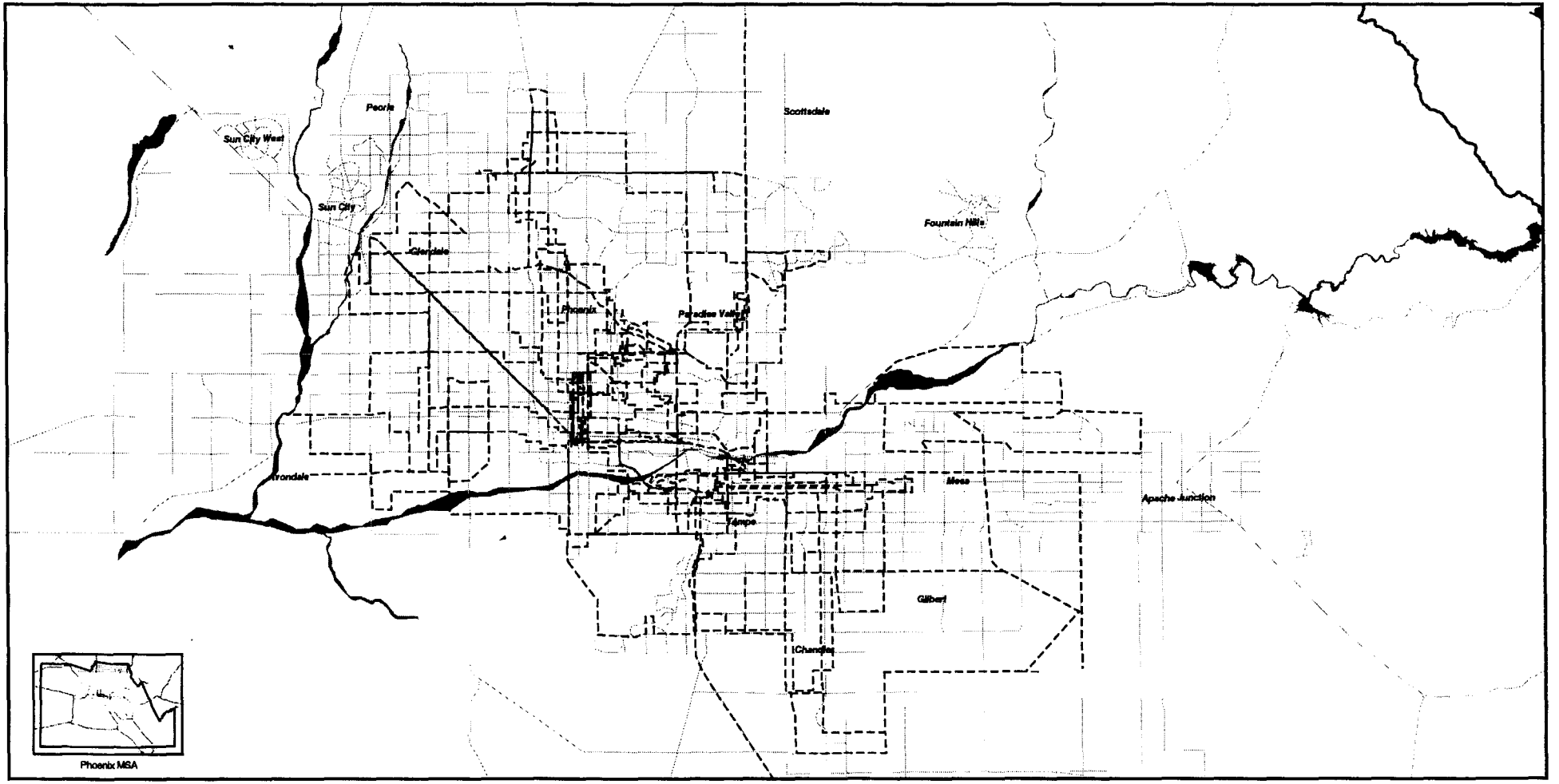
Signed

Before me this day personally appeared Nickie L. R. Duff, known to me to be the person described in and who executed this agreement.

WITNESS my hand and official seal at Boise in Ada County in the State of Idaho this 13th day of August, 1998.

Signature Sandra M. Galuca
Notary Public for Idaho
My commission expires 3/7/2000

ATTACHMENT D



Notes :
1. Sources : Quality Strategies and U S WEST Customer Billing Records.
2. 86% of the U S WEST DS1 Equivalent Services are within 1000 FT of Competitive Provider Coverage.

Legend

Competitive Access Provider Fiber

Major Roads

N

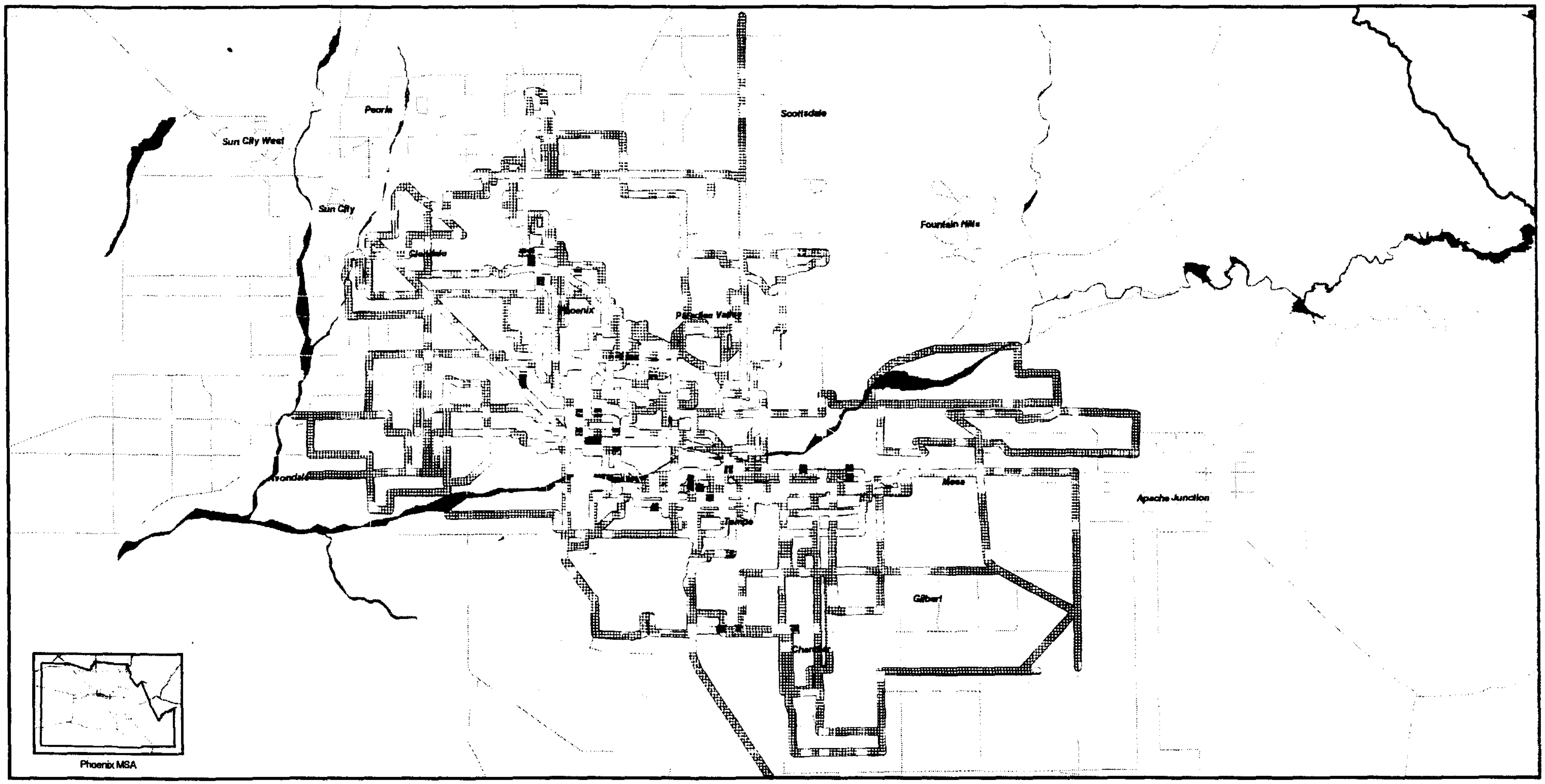
1 inch = 5 miles

U S WEST MAGIC

Competitive Provider Coverage of U S WEST DS1 Equivalent Services

USWEST

ATTACHMENT E



Notes:
1. Sources: Quality Strategies and U S WEST Customer Billing Records.
2. 86% of the U S WEST DS1 Equivalent Services are within 1000 FT of Competitive Provider Coverage.

Legend

DS1 Equivalent

- 1 to 10
- 11 to 30
- 31 to 100
- 101 to 1000
- >= 1000
- Major Roads
- Buffer area within 1000 ft. of CAP Fiber

N

1 inch = 5 miles

U S WEST MAGIC

Competitive Provider Coverage of U S WEST DS1 Equivalent Services

USWEST

EXHIBIT B

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

IN THE MATTER OF U S WEST COMMUNICATION, INC. FILING ITS NOTICE OF INTENTION TO FILE SECTION 271(c) APPLICATION WITH THE FCC AND REQUEST FOR COMMISSION TO VERIFY U S WEST COMPLIANCE WITH SECTION 271(c)	)))))))	APPLICATION NO. _____

DIRECT TESTIMONY OF

Robert G. Harris

Principal at LECG, Inc.

June 23, 1998

EXECUTIVE SUMMARY

The primary objective of the Telecommunications Act is to open all telecommunications markets to competition and extend the benefits of increased competition across the range of telecommunications services. In this testimony, I assess whether U S WEST has met the requirements of Section 271 of the Act from an economic perspective. I conclude that the Nebraska Public Service Commission should support U S WEST's entry into interLATA services for the following reasons: (1) local exchange markets in Nebraska are open to competition, (2) U S WEST's entry into the interLATA market is in the public interest, and (3) regulatory safeguards and competitive conditions are sufficient to ensure that U S WEST will not harm competition in the interLATA market.

A. NEBRASKA'S LOCAL EXCHANGE MARKETS ARE OPEN TO COMPETITION

The appropriate criterion for assessing competition for a 271 filing is whether local exchange markets are open to competition. This entails examining the competition that currently exists, the economic conditions that determine the attractiveness of a market, and barriers to entry.

1. Competitive entry in Omaha and other areas of Nebraska meets the requirements of Section 271

Three competitive local exchange carriers (CLECs) have entered the local exchange market in the Omaha metropolitan area, and two companies are serving or have announced plans to serve businesses in smaller communities.

1Cox Communications, the cable provider in the Omaha metropolitan area, began offering local telephone service to residential customers in parts of Omaha in December of 1997 and plans to roll out telephony offerings to its entire cable service area in Omaha by the end of 1998. Cox is packaging local, long distance, cable, telephony, cable modem and other services together and offering substantial discounts.

2TCG, the large CLEC which was recently purchased by AT&T, constructed a 200-mile network in Omaha in 1993 to provide dedicated access and private line services to large business customers. TCG, which has more than 100 telecommunications-intensive business customers, recently installed a switch on its Omaha network, and has announced that it will offer a range of telecommunications services, including local and long-distance telephony and data services, to business customers.

3Aliant, an independent incumbent local telephone company has been providing cellular services and business communications systems (i.e. PBXs) to customers throughout Nebraska for several years. In June 1997, the company began offering competitive local telephone services, targeting its customer base of cellular subscribers and PBX users in businesses and apartment buildings.

4FirsTel, a subsidiary of Advanced Communications Group, is currently reselling local exchange service in the more rural communities of Nebraska.

5Nebraska Technology and Telecommunications (NT&T) is a new entrant formed by eight small existing independent local telephone companies in Nebraska. Unlike other new entrants, NT&T is targeting business customers in small communities with populations greater than 1,000. NT&T plans to combine local telephony, initially via resale, with telecommunications management and consulting services.

2. *Entry occurring in Omaha exposes a high percentage of U S WEST's revenues and customers in Nebraska to competition*

U S WEST's customers are concentrated in Omaha's market, which represents 64 percent of all U S WEST customers and 68 percent of U S WEST's revenues in Nebraska. Thus, competitive entry by Cox, TCG and Aliant will provide competitive alternatives to a large majority of U S WEST customers in Nebraska. While more limited, entry in the rural communities in Nebraska is occurring. Aliant, NT&T and FirsTel are currently offering or planning to offer service in the out-state areas.

3. *The removal of barriers to entry via regulatory reforms and industry structural changes ensures that local exchange markets are and will remain open to competition.*

From an economic perspective, actual competition is an important factor in assessing openness to competition. Another important factor is barriers to entry. An evaluation of

the structure of the telecommunications industry demonstrates that barriers to entry have been effectively eliminated. The structure of the industry today is conducive to entry for two reasons. First, the interconnection, unbundling and resale requirements of the Act ensure that LEC economies of scale and scope be shared with new entrants. I have reviewed the prices that are available today in the Cox and TCG interconnection agreements and conclude that they were established in a way that will promote entry. Second, the structure of the telecommunications industry has changed from highly integrated to highly de-integrated, reducing barriers to entry and creating multiple entry paths.

In today's telecommunications industry, competitors can target their entry to specific market segments where they have a competitive advantage, minimizing the resources and time required to enter. The opportunities created by the restructuring of the competitive environment in telecommunications are available to new entrants in all parts of Nebraska. However, some of the national CLECs, which are focusing on large urban markets, may be withholding entry in Nebraska in order to slow U S WEST's entry into long distance. U S WEST entry into long distance will accelerate local entry by these competitors.

B. U S WEST LONG DISTANCE ENTRY

Consumers will benefit from U S WEST entry into long distance services through increased competition in local exchange services, long distance services and integrated packages of telecommunications services. The benefits of increased competition in each of these areas arise from increased choice for all customers in U S WEST's service areas, lower prices and/or increased quality of service, and increased innovation in telecommunications products and services.

U S WEST plans to offer all business and residential customers in its service areas with a range of telecommunications service packages. The strong consumer demand for service

packages is well established. Independent local exchange carriers and cable providers are permitted and are beginning to offer packages to customers in Nebraska. Likewise, U S WEST should be allowed to compete, with comparable offerings, in its Nebraska service areas; such competition for packaged services is exactly in line with the purpose and intent of the Telecom Act and would unambiguously benefit consumers through lower prices, greater choice, and improved service quality.

The interLATA market remains highly concentrated in Nebraska, and, except for the highest volume customers, interLATA prices exceed competitive levels. The benefits that U S WEST can bring to the interLATA market for Nebraska-originating calls stem from four factors: (1) this market currently is not fully competitive and is subject to cartel-like pricing and advertising behavior; (2) U S WEST will be an efficient and effective competitor in the market; (3) U S WEST will be prepared to offer competitively priced packages of telecommunications services to Nebraska consumers; and (4) these benefits will be passed on to a broader group of customers in Nebraska, not solely to the high volume business users.

Based on the SNET experience in Connecticut, it appears likely that U S WEST's ability to offer integrated service packages in Nebraska will accelerate plans by the major IXCs to follow suit and enter as local exchange competitors in Nebraska. Because local exchange markets are open in Nebraska and adequate regulatory safeguards are in place, allowing U S WEST to expand its offerings will increase competition in areas where competition is already occurring like Omaha, and increase the likelihood of competition in more rural parts of Nebraska, where CLECs have not yet decided to enter.

C. REGULATORY SAFEGUARDS

The competitive environment, along with the regulatory safeguards in place are sufficient to ensure that U S WEST cannot engage in anti-competitive behavior. A key reason why

U S WEST could not harm competition if it entered the interLATA market is that U S WEST's entry will be *de novo* expansion. Even though U S WEST would be a major supplier to its long distance competitors, providing them with access to the local network, U S WEST would have zero interLATA market share and, therefore, no market power in the long distance market.

Opponents to RBOC entry point to the potential for a RBOC to foreclose access services to long distance rivals or, more generally, to decrease the quality of the services provided to IXCs. Hypothetical arguments, however, that an RBOC could discriminate directly against IXCs competing with its long distance affiliate by manipulating the quality of access service are without merit. Discrimination in the quality of access services through manipulation of the switch processor, switched transport, dedicated transport, traffic routing, or other physical facilities is unfeasible. If U S WEST deviated from its own past performance or the performance of the other four RBOCs, the FCC could easily identify the aberrant behavior and issue the appropriate punishment, which could include withdrawal of interLATA authority.

Additional support that U S WEST lacks the incentive and ability to impede competition is found in the intraLATA toll and wireless markets, which have the same kind of vertical relationship to access services as interLATA service, but show no signs of discrimination or other anticompetitive conduct by U S WEST. The combination of competition in access services and regulatory oversight has prevented vertical leveraging. For the same reasons -- access competition plus regulatory safeguards – discrimination or anticompetitive conduct would be highly unlikely if U S WEST were allowed to offer interLATA services.

D. IMPLICATIONS FOR POLICY

Policies designed to facilitate competition and ensure open markets must be sensitive to differences in market conditions, differences between rural and urban states and between rural and urban areas within each state. In urban markets, including Omaha, CLECs are competing for the higher-volume, lower-cost customers. In more rural parts of Nebraska, however, entry will be more limited, even though markets are open. Uniform standards related to levels of competitive entry will unfairly disadvantage smaller, more rural, geographic markets. A standard requiring a high degree of competitive entry in Nebraska's local exchange markets will prevent, perhaps indefinitely, the entry of U S WEST into long distance in Nebraska and effectively stymie a primary objective of the Telecommunications Act – opening all telecommunications services to competition.

I recommend, without reservation, that the Nebraska Public Service Commission support U S WEST's request to enter the interexchange market. The local exchange markets in Nebraska are open to competition, U S WEST will inject valuable added competition into the interLATA market, and there is no substantial possibility that U S WEST's entry into the interLATA market will harm interLATA competition. U S WEST's entry into the long distance market is an important step towards promoting competition in all telecommunications markets and will bring the benefits of a wider range of communications and information services to the consumers and businesses of Nebraska.

INDEX OF TESTIMONY OF ROBERT G. HARRIS

I. INTRODUCTION

A. QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND QUALIFICATIONS

A. My name is Robert G. Harris. I am a Principal at LECG, Inc., and Professor Emeritus of Business and Public Policy at the Haas School of Business, University of California, Berkeley. My business address is 2000 Powell Street, Suite 600, Emeryville, CA 94608. I earned Bachelor of Arts and Master of Arts degrees in Social Science from Michigan State University and Master of Arts and Doctor of Philosophy degrees in Economics from the University of California, Berkeley. I currently teach a graduate course in "Telecommunications Economics, Policies and Strategies," and have taught courses at the undergraduate, MBA and Ph.D. levels, in Antitrust and Economic Regulation, Managerial Economics, Business and Public Policy, Competitive Strategy, Transportation and Corporate Governance. For several years, I taught a course on telecommunications economics and public policy to the staff of the California Public Utilities Commission. I have also taught competitive strategy and telecommunications in Executive Education programs for business managers and public officials from the United States and abroad at UC Berkeley and the University of Southern California.

My academic research has analyzed the effects of economic regulation and antitrust policy on industry performance, and the implication of changing economics and technology for public policies in transportation and telecommunications. I have published dozens of academic articles on antitrust policy, regulatory policy, telecommunications policy, technological innovation, the economics of telecommunications and transportation, and the development of competition and

interconnection policies in local access and exchange services. Over the past decade, I have testified before the relevant committees of the House of Representatives and U.S. Senate on proposed legislation and before the Federal Communications Commission and regulatory commissions in many states around the country on key telecommunications issues including incentive regulation, rate design, costing and pricing principals, and competition policy. My professional qualifications are detailed in my curriculum vitae, which is attached as Exhibit RGH-1.

B. PURPOSE AND ORGANIZATION OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. This testimony is submitted on behalf of U S WEST in support of its Section 271 application filing in Nebraska. I provide an economic assessment of three areas associated with U S WEST entry into long distance: competition, public interest, and regulatory safeguards. I conclude that (1) U S WEST's local exchange markets in Nebraska are open to competitive entry; (2) allowing U S WEST to provide interLATA services is in the public interest; and (3) U S WEST does not have the ability or incentive to harm competition.

Q. WHAT IS THE ORGANIZATION OF THIS TESTIMONY?

A. This testimony is organized into six sections. Section II addresses the public policy reasons for U S WEST's entry into the long distance market in Nebraska. In Section III, I provide an economic assessment of local exchange competition including evaluations of actual competition, barriers to entry, and the economic attractiveness of local markets. This assessment shows that local exchange markets in Nebraska are open to competition today and will remain open. In Section IV, I analyze the expected benefits to consumers

in Nebraska when U S WEST enters as a long distance competitor. Nebraska consumers will benefit from additional competition in long distance service and the ability to purchase integrated services. In addition, U S WEST entry into long distance will accelerate entry by other competitors, such as interexchange carriers (IXCs), into local exchange markets. In Section V, I counter concerns that U S WEST's entry into long distance services could harm competition. I describe the regulatory and competitive safeguards that are in place. I also provide several examples of situations where an incumbent Local Exchange Carrier (LEC) theoretically had an opportunity to leverage its position in local exchange and access into related markets, showing that there is no evidence of anticompetitive behavior by the incumbent. Section VI provides a brief summary of my findings.

II. PUBLIC POLICY OBJECTIVES

A. OBJECTIVES OF THE TELECOMMUNICATIONS ACT OF 1996

Q. WHAT ARE THE IMPORTANT PUBLIC POLICY OBJECTIVES FOR THIS FILING?

A. U S WEST is filing this application to enter the long distance market under Section 271 of the Telecommunications Act of 1996. The primary objective of the Act is to open all telecommunications markets to competition so that consumers can reap the benefits of increased competition across the range of telecommunications services. Promoting competition in all telecommunications services will generate significant benefits by increasing consumer choices, stimulating investment in Nebraska's information infrastructure, and by providing incentives for innovation and new services.

Q. HOW WAS THE ACT DESIGNED TO PROMOTE COMPETITION IN ALL TELECOMMUNICATIONS MARKETS?

A. A primary focus of the Act is to create and enhance competition in local and long distance telecommunications markets. Regional Bell Operating Companies (RBOCs), such as U S WEST, must meet terms and conditions for local interconnection and checklist requirements to ensure that local exchange markets are open to competition before they are allowed to enter the long distance market. With this approach, Congress seeks to place all competitors on the same field of play and promote cross-entry of local exchange carriers into long distance and other carriers into the local exchange. Cross-entry is expected to provide consumers with multiple sources for a wide range of services and the convenience of buying multiple services from a single source (one-stop shopping). Cross-entry is also expected to allow service providers to take advantage of marketing economies of scale and scope when entering new markets and translate these economies into lower quality-adjusted prices for consumers. As the Senate Conference report states, the intent of the Act is "to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition."[1]

Q. WHAT ARE THE SPECIFIC REQUIREMENTS OF SECTION 271 AND HOW ARE THEY DESIGNED TO PROMOTE THE OBJECTIVES OF THE ACT?

A. Section 271 has three requirements. The first is aimed at ensuring that local exchange markets are open to competition. Within this first requirement, there are two types of conditions which must be met to prove an applicant's local market is open to

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[1] Joint Statement of Managers, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 1 (1996).

competition: (1) compliance with the checklist items which address prices, terms and conditions for unbundled elements, interconnection, and resale, and (2) the demonstration of facilities-based competition[2] (known as Track A) or, if there are no competitive providers within a specified time frame, a statement of generally available terms and conditions for access and interconnection that U S WEST would offer to competitors (Track B). The testimony of U S WEST witnesses describes how U S WEST meets these competitive requirements in Nebraska. My testimony shows, from an economic perspective, that U S WEST's local exchange markets in Nebraska are open to competition and explains how the requirements in the Act, coupled with industry structure changes and current competitive entry, ensure that these markets will remain open in the future.

The second requirement of the Act is that RBOC entry into long distance services be "consistent with the public interest, convenience, and necessity."[3] For the purposes of Section 271 approval, assessing public interest necessitates an evaluation of the benefits that consumers will realize through increased competition associated with RBOC entry into long distance. Due to strong consumer demand for integrated services, benefits flow to consumers through additional competition in both the local exchange and long distance markets.

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[2] In its decision on Ameritech's 271 filing in Michigan, the FCC correctly determined that the provision of local exchange service through the purchase of unbundled network elements is sufficient to satisfy the requirement that competitors provide service over their own facilities: "[w]e believe that interpreting 'own telephone exchange service facilities' to include unbundled network elements will further Congress' objective of opening the local exchange and exchange access markets to competition." See *The Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide InterLATA Service Originating in Michigan*, CC Docket No. 97-137, Memorandum Opinion and Order, August 19, 1997, ¶ 99.

[3] 47 U.S.C. §271(d)(3).

The third requirement is that an RBOC comply with the provisions of Section 272 of the Act. These provisions, which govern the terms and conditions for providing long distance service, are designed to eliminate the possibility of an RBOC using its position as the incumbent provider of local exchange services to gain an unfair advantage over competitors in long distance services.

Q. IS THERE A ROLE FOR STATE REGULATORY COMMISSIONS IN THE SECTION 271 EVALUATION PROCESS?

A. Yes. It is the role of the state commission to ensure that terms and conditions negotiated or determined through arbitration comply with the standards of the Act.[4] This role is key to successfully promoting competition through efficient entry into the local exchange. Moreover, the Act specifies that the FCC must consult with the state commission to verify that the RBOC complies with the competition requirements of Section 271.[5] Thus, the state commissions are active participants in the evaluation of competitive conditions within the state. It is clear from these responsibilities that Congress intended issues associated with competitive local exchange entry to be evaluated on a state-specific basis.

Q. ARE THERE ECONOMIC REASONS FOR ADDRESSING SECTION 271 APPLICATIONS ON A STATE-SPECIFIC BASIS?

A. Yes. A state-specific approach makes economic sense given the significant differences in economic conditions around the country. Economic and demographic factors to a large degree determine the rate and pattern of local exchange entry in each state. Competitive local Exchange carriers (CLECs) are channeling their investments into areas with high

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[4] This was affirmed by the Eighth Circuit District Court which stated that state commissions have the authority to "determine prices an incumbent LEC may charge for fulfilling its duties under the Act." See, *Iowa Utilities Board v. FCC,* 120 F.3d 791, 793-96 (8th Cir 1997).

[5] 47 U.S.C. §271(d)(2)(B).

population density and economically attractive telecommunications markets (i.e. containing clusters of telecommunications intensive businesses, healthy regional economies, upper income residents etc.), where it is possible to capture substantial and growing amounts of local revenues in relatively small geographic areas. Differences among states also have implications for consumer benefits. The importance of considering state differences in Section 271 applications is explained by FCC Commissioner Michael Powell:

> "Cookie-cutter solutions that ignore the economic, regulatory and technical context in which each applicant operates may unduly burden BOCs or deprive new entrants of a fighting chance to compete for local exchange customers...I am also concerned that if we do not tailor checklist solutions to particular States or regions, we may overlook small and mid-sized competitors, whose competitive activities and successes all too often are drowned out by the chorus of larger companies that constantly serenade those of us within the Beltway."[6]

Q. WHAT ARE THE DISTINCT CHARACTERISTICS OF U S WEST'S SERVICE AREA IN NEBRASKA?

A. U S WEST's service area in Nebraska has several distinctive characteristics. First, the Nebraska economy, especially in Omaha, is largely centered around industry that is heavily dependent on telecommunications. According to Computer World magazine, over one-fifth of Nebraska's workforce is employed in telemarketing,[7] an industry ranking second in Nebraska in terms of total projected job growth through the year 2005.[8] In addition, Omaha is a center for financial services, including insurance companies (e.g.

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6 FCC Commissioner Michael Powell, "Wake up Call: FCC Commissioner Michael Powell Calls for New Collaborative Approach to Section 271 Applications," *White Paper,* January 15, 1998.

7 "Ease and Opportunity," *Computer World,* May 20, 1996.

8 "Projected Growth Occupations Through 2005 by Job Numbers," *Report by the Nebraska Department of Economic Development*, December 2, 1997.

Mutual of Omaha), and transactions processing for credit card issuers, like First Data Resources Corporation, which rely heavily on telecommunications services. Omaha is also a regional center of medical and health care providers.[9] Telecommunications services are a critical input for these industries, resulting in a strong demand for sophisticated and innovative telecommunications services. Competitors, such as TCG, who already provide private line telecommunications services to many large Omaha businesses, are responding to this demand by entering the Omaha market as full-service CLECs.

Second, Nebraska boasts one of the most advanced, state-wide telecommunications networks in the country. The State of Nebraska embarked on an initiative to bring advanced telecommunications capabilities to all parts of the state. Through a coordinated effort driven by the state government, U S WEST, along with other Nebraska telecommunications companies, built the nation's first state-wide frame-relay network in 1993.[10] As a result, 98 percent of all school districts in Nebraska have a direct connection to the Internet.[11] The availability of online and advanced services to communities throughout the state stimulates demand for telecommunications services and creates opportunities for telecommunications providers.

Third, population and local exchange revenues in U S WEST's service area in Nebraska are highly concentrated. The Omaha area accounts for nearly 64 percent of the population and 68 percent of revenue in U S WEST's service area.[12] As explained in the

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9 For more information on the Omaha economy see the Greater Omaha Chamber of Commerce Website Access Omaha, which contains a profile of the Omaha economy, <http://www.accessomaha.com/top20employers.html>

10 "Nebraska Scores a Frame-Relay First," *Telephony,* February 1, 1993.

11 "Nebraska Among Internet Access Leaders," *Nance County Journal,* April 1, 1998.

12 U S WEST internal data and US Census Bureau Web Page <http://www.census.gov/cgi-bin/gazetteer >

next section, these demographic conditions are a major force driving the pattern of competitive local entry in U S WEST's Nebraska service area.

Fourth, policy makers in Nebraska has fostered a competitive environment by emphasizing deregulation of telecommunications services and promoting investment in telecommunications infrastructure statewide. Key legislation adopted in 1986 and 1997 provide for greater pricing flexibility, rate rebalancing, and a procedure for deregulating services, making Nebraska a more attractive investment opportunity for telecommunications providers.

Taken together, economic and demographic characteristics of Nebraska have a strong impact on the development of competition in Nebraska's telecommunications markets. These characteristics must be taken into consideration when evaluating U S WEST's Section 271 application for long distance entry.

III. LOCAL EXCHANGE MARKETS IN NEBRASKA ARE OPEN TO COMPETITION

A. INTRODUCTION

Q. WHAT SHOULD BE THE CRITERION FOR ASSESSING COMPETITION FOR PURPOSES OF A SECTION 271 FILING?

A. The appropriate criterion for assessing competition for a Section 271 filing is whether local exchange markets are open to competition. This means that avenues must exist for competitors to enter and exit freely in response to changing market conditions; it does not necessarily mean that competitors will enter. The distinction between open to entry and actual entry is important because once it is established that local exchange markets are open, regardless of the extent of actual entry, granting interLATA relief will pave the way

for full competition across both local and long distance markets as cross-entry occurs. Delaying interLATA entry would serve only to delay the benefits of full competition to consumers.

The criterion that markets be open to competition is consistent with the views of key decision makers at the FCC and Department of Justice (DOJ). According to Mr. William Kennard, Chairman of the FCC: "The law makes clear that the door to competition must be open, and Section 271 approval can be granted regardless of whether competitors have walked through the open door."[13] Also, in the words of Mr. Joel Klein, Assistant Attorney General of the Antitrust Division of the DOJ:

> "[I]f the local market is irreversibly opened, but the long distance companies have not entered – for whatever reason – then the Act properly contemplates that the Bell Companies should be allowed into long distance, both to give consumers the benefit of at least one provider who can offer one-stop shopping as well as to pressure the long distance companies to enter the local market in order to match the one-stop shopping options offered by the local Bell."[14]

Q. WHAT FACTORS ARE IMPORTANT IN DETERMINING IF A MARKET IS OPEN TO COMPETITION?

A. There are three important factors to consider in assessing whether a market is open to competition: (1) the extent of existing competition, (2) the attractiveness of the market for entry and (3) barriers to entry. Clearly, the existence of competition provides tangible evidence that markets are open. If, however, actual competition is limited in a particular market, it is necessary to consider whether limited entry is due to barriers imposed by the incumbent LEC or other economic factors, such as the profit potential in a given local

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[13] Remarks by William E. Kennard Chairman Federal Communications Commission to Legg Mason, "Telecom Investment Precursors," *Workshop, Washington DC*, March 12, 1998.

[14] Remarks of Joel Klein, Assistant Attorney General Antitrust Division Department of Justice, before the Senate Judiciary Committee, Antitrust, Business Rights and Competition Subcommittee, March 4, 1998.

market. Analyses of the economic attractiveness of local exchange markets and of barriers to entry provide a framework for assessing the reasons for limited entry.

Q. HOW DO ECONOMISTS ASSESS EXISTING COMPETITION?

A. To assess existing competition, it is necessary first to identify the products or services that should be included in the analysis. This assessment involves identifying products that are substitutes for the product or service in question. Some CLECs are offering direct substitutes for local exchange service exclusively over their own networks. CLECs are also offering direct substitutes for local exchange service through the leasing of unbundled elements or resale of the incumbent LEC's service. Evaluations of local exchange competition have typically focused on these forms of direct substitution. There are, however, a growing number of services, such as wireless services, email, and Internet fax, that also compete with traditional local exchange services. These additional forms of competition are among the fastest growing services in telecommunications, and they represent an increasingly powerful competitive force in local exchange service.

Q. WHAT DO YOU MEAN BY ATTRACTIVENESS OF A MARKET TO ENTRY AND HOW DO ECONOMISTS ASSESS THIS?

A. An assessment of the attractiveness of a market to entry examines the market from an entrant's point of view. In network industries such as telecommunications, the size, location and density of a local market is critically important to an entrant because these factors drive both the potential revenue and costs. Other factors that affect the attractiveness of a market to entry are the intensity of telecommunications usage by customers in a given market and the competitive strengths of different entrants. For example, a competitor with existing assets in a particular geographic market or a

proximate market will find that market more attractive than a competitor with no assets in or near that market.

Q. WHY DO ECONOMISTS EXAMINE BARRIERS TO ENTRY?

A. For a market to be open to competition, avenues must exist for competitors to enter and exit freely in response to changing market conditions. Conversely, barriers which impose unnecessary costs on entry and exit are factors that limit the potential for competition. The requirements of Section 271 are designed to create entry avenues and ensure that potential barriers derived from an incumbent's network are eliminated. The unbundling and resale requirements of the Act, for example, allow CLECs to operate from the same scale and scope economies as the incumbent provider, and reduce traditional barriers resulting from high fixed costs of entry. Barriers have also been significantly reduced due to fundamental changes in the structure of the telecommunications industry, creating multiple entry paths for competitors.

B. COMPETITION IN NEBRASKA

1. Introduction

Q. HAS U S WEST MET THE COMPETITION REQUIREMENTS OF SECTION 271(C)(1)(A) OF THE ACT?

A. Yes. Under Section 271(C)(1)(A) of the Act, a Regional Bell Operating Company can obtain authorization from the FCC to provide inregion interLATA services if the RBOC has an approved interconnection agreement with one or more local competitors that serve business and residential customers in the RBOC's service territory "either exclusively over their own telephone exchange service facilities or predominantly over their own telephone exchange service facilities in combination with the resale of the

telecommunications services of another carrier."[15] As described in the testimony of Alan Bergman, U S WEST has 17 approved interconnection agreements with CLECs in Nebraska, two of which are currently providing facilities-based competitive local exchange services to business customers, residential customers, or both.[16]

2. Competition in traditional local exchange services

Q. PLEASE DESCRIBE COMPETITIVE ACTIVITY IN TRADITIONAL LOCAL EXCHANGE SERVICES.

A. Due to the distinct characteristics of local exchange markets in Nebraska and to the responsiveness of telecommunications providers to these characteristics, the majority of U S WEST's residential and business customers will have an alternative facilities-based service provider by the end of this year. As explained below, Cox Communications is in the process of rolling out local exchange service to residences in the Omaha area over its existing cable network. TCG has announced that it will offer local service to businesses in the Omaha area over its fiber network, and Aliant is using its facilities to provide local service to both businesses and residences in Omaha and Grand Island.

a. Cox Communications

Cox Communications is the cable service provider in the Omaha metropolitan statistical area.[17] Cox has taken advantage of new opportunities created by the Telecommunications Act by leveraging its existing network assets into the provision of telephony services in competition with incumbent LECs in selected markets. Nebraska is

[15] 47 U.S.C. § 271(c)(1)(A).

[16] See the Testimony of Alan L. Bergman in this proceeding, p. 3.

[17] Cox's service area includes Omaha, Carter Lake, Bellevue, Papillion, Ralston and La Vista in Nebraska and Council Bluffs in Omaha. See "Cable Vision Sells To Omaha's Cox", *Omaha World Herald*, April 21, 1998.

the second local exchange market that Cox has entered as a competitive local exchange carrier. Over the last 5 years, Cox has invested $200 million to upgrade and enhance its cable network to handle two-way telephony, video, and data transmission. Cox began offering local exchange service to residential customers in Omaha in December 1997.[18] Over the course of 1998, Cox plans to extend its local telephone service coverage to all customers in its Omaha service area.[19] Since the Cox service area corresponds closely to U S WEST's service area, virtually all residential customers in U S WEST's Omaha service area will have an alternative facilities-based provider for local exchange service by the end of the year.

Cox's strategy is to offer service integration, including local and long distance, as well as cable, Internet service, and digital TV, to residential customers in its cable service territory. Customers that subscribe to Cox's cable service receive discounts on basic local, second line local, cable modem, and enhanced local calling services. For example, Cox offers primary line basic local service at 10 percent below U S WEST's prices, and the price for second line service is about half of U S WEST's.[20] Enhanced services, including voice mail and call waiting, are priced up to 29 percent less than U S WEST.[21] This aggressive pricing, featuring significant discounts for second lines and enhanced services, clearly targeting the more intensive telecommunications users.

b. TCG

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[18] "Cox Adds Internet Product, Plans Phone Service," *Midlands Business Journal*, September 11, 1997. Cox is in the process of installing 90-volt generators throughout its network to boost quality and reliability of its phone service. "Cox Starts Rolling Out Phone Service," *Omaha World Herald*, December 6, 1997.

[19] "Cox Cable Unfurling Phone Service," *Omaha World Herald*, January 29, 1998.

[20] "Cox Communications Offering Phone Service to Omaha, Neb. Area," *Omaha World-Herald*, January 29, 1998.

[21] Cox direct marketing materials distributed in Omaha, May 1998.

Even before the recent acquisition by AT&T, TCG was one of the largest competitive access providers in the country. TCG first entered Nebraska as a competitive access provider, offering dedicated access and private line services to large business customers in Omaha. Since 1993, TCG has invested $37 million in the deployment of its 200-mile network and switching equipment in Omaha.[22] The company's existing 300 business customers[23] include of some of the largest businesses in Omaha like First Data Corporation's Call Interactive Group, ConAgra Inc., Commercial Federal Bank, Physicians Mutual Insurance Co. and Marriott Hotels' national reservation center.[24]

Since installing a switch in May of 1998, TCG has announced that it is ready to begin providing competitive local exchange services to Nebraska customers.[25] TCG's strategy consists of providing businesses with a full range of telecommunications services, including local, long distance, video, and high-speed data services, beginning with its existing customer base of large businesses in Omaha.

TCG's acquisition by AT&T,[26] will strengthen TCG's competitive position by: (1) the power of AT&T's brand name, (2) the ability to integrate local, long distance, data and video services, (3) the availability of additional capital, and (4) the ability to share in technologies being developed by AT&T.[27]

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22 "TCG's Telecommunications Switch Brings Local Telephone Competition to Omaha," *Midlands Business Journal,* May 22-28, 1998.

23 "TCG Gives Omaha Businesses More Phone Service Choices," *Omaha World Herald,* May 14, 1998.

24 "Teleport Girds for Competition," *Omaha World Herald,* September 7, 1997.

25 "TCG's Telecommunications Switch Brings Local Telephone Competition to Omaha," *Midlands Business Journal,* May 22-28, 1998.

26 "AT&T and TCG to Merge," *AT&T Press Release,* January 8, 1998.

27 "AT&T Says System Now Lets Clients Receive Local Calls," *Wall Street Journal,* June 9, 1998.

TCG's focus on providing local exchange services to business customers is consistent with AT&T's strategy. According to AT&T, currently half of its business revenue comes from customers who are connected directly to AT&T's network.[28] Focusing on large customers enables AT&T to avoid access charges and interconnection costs on call originations and greatly reduces AT&T's requirement for unbundled elements or local exchange resale. This may explain why AT&T has not requested unbundled elements from U S WEST, even after going through negotiation and arbitration over their terms and conditions.

c. Aliant

Aliant started as an independent local exchange company serving residential and business in southeastern Nebraska, including Lincoln, the second largest city in Nebraska. However, Aliant has expanded by offering business communication systems such as PBXs and cellular service to customers throughout the state.[29] Through these offerings, Aliant has developed strong brand name recognition throughout Nebraska. In July 1997, Aliant began offering competitive local exchange service to customers in Omaha.[30] At the end of last year, Aliant began offering local service in Grand Island,[31] and it has announced plans to enter several other smaller communities in Nebraska as well.[32]

Aliant's strategy is to offer service integration to its existing customer base of cellular subscribers and PBX customers in businesses and apartment buildings.[33] It is also

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[28] "Sprint Plans to Integrate Voice, Data," *Wall Street Journal,* June 3, 1998.

[29] "Aliant Eyes Omaha, Seeks OK to Expand," *Omaha World Herald,* November 16, 1996.

[30] 1997 Aliant Annual Report

[31] "Aliant Entering Local Market," *Grand Island Independent*, May 31, 1998.

[32] "Aliant Hopes to Offer Local Service to Omaha Businesses," *Lincoln Journal Star,* February 12, 1998.

[33] "Aliant Maps Growth," *Omaha World Herald*, April 28, 1998.

competing to be the local service provider for new residential developments outside of its existing service area.[34] "We have been doing business outside our traditional telephone exchange market for some time. Extending a full range of services to Nebraskans – local, long distance, Internet access and cellular – is a logical growth strategy for us."[35]

Aliant's strengths lie in its competitive pricing, existing base of business equipment and cellular customers, strong name recognition in Nebraska, extensive experience in providing local exchange service, and existing facilities and staff in Nebraska. For these reasons, it is successfully selling local exchange service in Omaha today and is well positioned to compete throughout U S WEST's service area in Nebraska.

d. Other Entrants

As of May 15, 1998, 20 CLECs, including facilities-based IXCs, cable companies, cellular companies and resellers of long distance services, have been certified to provide local service in Nebraska.[36] One of these is FirsTel, a subsidiary of Advanced Communications Group (ACG), that began as a reseller of long distance service and is extending its offerings into local exchange service.[37] FirsTel is currently reselling U S WEST's local exchange service in the out-state areas.[38] ACG's strategy is to acquire customers through resale and build networks when there is sufficient demand.[39]

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[34] Aliant is providing alternative local service to about 35 customers in the Jeffrey Oaks subdivision area of northwest Grand Island. "G.I to see Telephone Competition," *Grand Island Independent*, December 6, 1997.

[35] "Aliant Eyes Omaha, Seeks OK to Expand," *Omaha World Herald,* November 16, 1996.

[36] Nebraska Public Service Commissions Web Page < http://www.nol.org/home/NPSC/clec.htm >

[37] "Advanced of St. Louis Is Meeting Rollout Targets," *Communications Business & Finance*, June 1, 1998. See also "Advanced Communications Group Reorganizes Sales Team; Integrated Telecommunications Provider Announces New Hires," *Business Wire*, June 10, 1998.

[38] Per conversation with U S WEST.

[39] "New Phone Firm Will Take on The Big Guys," *St. Louis Post*, May 30, 1998, Page 30.

Nebraska Technology & Telecommunications (NT&T), is a new consortium of eight small independent LECs in Nebraska. In contrast to Cox, TCG, and Aliant, NT&T plans to target small communities with populations of one thousand or more.[40] NT&T's strategy is to supply all of a business' telecommunications needs, including telecommunications equipment, services, consulting and management. NT&T plans to provide local exchange service initially through resale, but is considering providing service over its own facilities by the end of 1998 through the installation of switching and/or fiber optic facilities.[41]

Q. WHAT ARE THE IMPLICATIONS OF THIS COMPETITIVE ENTRY FOR U S WEST'S TELECOMMUNICATIONS CUSTOMERS IN NEBRASKA?

A. U S WEST's customers and revenue are highly concentrated in Omaha; consequently competitors entering this area have access to nearly 70 percent of U S WEST's revenue in Nebraska. Cox Communications' cable network, for example, extends throughout the Omaha area. When it has completed the roll out of local exchange service by the end of this year, Cox will have access to 63 percent of U S WEST's residential revenue.

Similarly, TCG has access to a large percentage of U S WEST customers. While TCG's Omaha network, is relatively small in terms of geographic area, it can provide competitive local service to a large majority of businesses in Omaha. Forty-two percent of U S WEST's business revenue in the state of Nebraska are located within one-half mile of TCG's network; these businesses are easily accessed by a fiber link.

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[40] "NT&T Phone Company Gets Nod in Nebraska," *Evening World Herald*, October 30, 1997.

[41] The company is negotiating interconnection agreements with U S WEST, GTE, and Sprint/United.

In addition, TCG uses wireless technologies to serve customers that are located further off its fiber route.[42] To this end, TCG acquired 100 percent ownership in BizTel, a leading supplier of 38 GHz wireless point-to-point services.[43] Press accounts and analyst reports suggest that the 38 GHz wireless point-to-point broad band technologies have a range of five miles without the use of repeaters.[44] Lower GHz transmission technologies such as LMDS, which will be available in the near future, have greater transmission ranges. To be conservative, I used a four mile radius for estimating the geographic area in Omaha that TCG can address by extending its fiber network with wireless links. Figure 1 shows a four-mile contour around the TCG network in Omaha. The area within the four mile contour covers virtually all of the high density areas in the Omaha metropolitan area, giving TCG access to 75 percent of business revenue in U S WEST's service area in Nebraska.[45]

Q. PLEASE SUMMARIZE COMPETITIVE ENTRY.

A. Cox, TCG and Aliant are in the process of rolling out local exchange service to a large majority of U S WEST business and residential customers in Nebraska. So far, this entry has been exclusively facilities-based. Currently four CLECs have 17 local interconnection trunk groups in U S WEST central office.[46] It is likely that, as competitors expand into new geographic and customer segments, they will pursue

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42 "Teleport Girds for Competition," *Omaha World Herald*, September 7, 1997.

43 See *TCG Press Release*, "Teleport Communications Group Completes Acquisition of BIZTEL Communications Which Has 38 GHZ Licenses for More than 200 Markets Nationwide," October 30, 1997 and "Go The 'Last Mile' with TCG," <www.tcg.com/tcg/products/wireless.html>.

44 See Mary Thyfault, "Wireless Local Loop—Winstar to Roll Out Microwave-based Service Nationwide," *Information Week*, November 25, 1996 and Deutsche Morgan Grenfell, *Teleport Communication Group*, August 9, 1996.

45 Based on U S WEST analysis.

46 See testimony of Michael Weidenbach in this proceeding.

additional entry paths, such as purchasing unbundled loops from U S WEST. Currently, at least two companies are in the process of collocating in 11 wire centers in Omaha and Grand Island.[47] Collocation will enable these CLECs to lease unbundled loops from U S WEST, extending their reach and providing them with flexibility in provisioning customers throughout the area.

3. Additional forms of competition in local exchange service

Q. WHAT ADDITIONAL PRODUCTS AND SERVICES COMPETE WITH TRADITIONAL LOCAL EXCHANGE SERVICE?

A. In addition to local exchange competition over alternative networks, there has been tremendous growth in the type of local exchange services available to end users. Today, local exchange services include not just traditional voice communications, but also a wide range of other services including fax, enhanced calling services such as call waiting and caller ID, voice messaging store-and-forward, and email. These local exchange services are being offered not only over the traditional public switched network, but through customer premise equipment, satellite transmission, wireless networks and data networks. Many of these services are being used by residential as well as business customers.

Q. HOW DO WIRELESS SERVICES COMPETE WITH TRADITIONAL LOCAL EXCHANGE SERVICE?

A. Wireless services are increasingly competing with local exchange service as prices decline.[48] With the introduction of PCS services throughout the country, there have been

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[47] See testimony of Michael Weidenbach in this proceeding.

[48] The FCC has recognized that viability of wireless services as a substitute for wireline services in stating that "Section 271 does not preclude the Commission from considering the presence of a PCS provider in a particular state as 'facilities-based.'"

significant price reductions in wireless services. These reductions have come in the form of reduced per minute prices, increased "free" minutes, discounts on packages of services and larger local calling areas. The Yankee Group estimates that in markets where at least one new PCS competitor has begun service, prices of wireless services have dropped on average by 25%.[49] Industry analysts project that price declines will continue. Yankee Group projects that over next 12 to 18 months, there will be a significant overall reduction in price, resulting in the displacement of wireline traffic with wireless services.[50]

In some regions of the country, wireless services are already displacing significant volumes of wireline traffic. BellSouth reported that "[m]arket surveys of PCS service in Louisiana indicate that about 17 percent of PrimeCo's and Sprint Spectrum's 8000-plus customers chose to subscribe to PCS service instead of subscribing to wireline service" and that "29 percent of Louisiana PCS users report that they now use PCS as their primary home or business phone."[51]

In Nebraska, wireless service prices today are above wireline. Sprint PCS, which serves the Omaha area, offers 240 unbilled local minutes per month, voice mail, caller ID, call waiting and three-way calling for $49.99 per month. The local minutes cover a geographic area ranging from just west of Omaha in the west to Cedar Rapids, Iowa in

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[49] "PCS is Driving Down U.S. Wireless Pricing", Media Release, The Yankee Group, September 29, 1997. (www.yankeegroup.com/press_releases/pcs_pricing.html)

[50] "PCS is Driving Down U.S. Wireless Pricing", Media Release, The Yankee Group, September 29, 1997. (www.yankeegroup.com/press_releases/pcs_pricing.html)

[51] *BellSouth brief In the Matter of Application by BellSouth Corporation, et al.* Pursuant to Section 271 of the Communications Act of 1934, as amended, To Provide In-Region, InterLATA Services in Louisiana, CC Docket No. 97-231, November 6, 1997, p. 52.

the east.[52] For mobile or intensive users who get high value-added from communications, this package can be an attractive alternative to wireline services. As prices decline, more and more customers will find wireless services to be a viable substitute for wireline services.

Q. HOW DOES TELECOMMUNICATIONS EQUIPMENT COMPETE WITH LOCAL EXCHANGE SERVICE?

A. Private branch exchanges (PBXs) represent another form of local exchange competition. The vast majority of businesses use PBXs or key systems to self-supply switching and enhanced services for intra-company calls, and many large businesses have private networks that provide all local exchange services for these calls. PBX equipment substitutes for local service in much the same way that an electric heater substitutes for gas heating provided by a utility. PBXs can operate as stand-alone switching hubs or as remote switching nodes on private networks consisting of many switches and lines. PBXs also reduce the need for access lines because they aggregate calls of multiple users over one line. The PBX was a key development leading to the entry of companies such as MFS and TCG, who built networks to provide local and long distance access to business users.

Q. HOW DO SATELLITE SERVICES COMPETE WITH LOCAL EXCHANGE SERVICE?

A. Very Small Aperture Terminal (VSAT) technology provides satellite-based transaction processing systems. Because VSATs use wireless transmission, these networks serve low density locations in rural areas nearly as efficiently as they serve urban sites. For

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[52] "Service Area Maps, Greater Omaha – Lincoln Area," www.sprintpcs.com/Coverage/omahamap.html, June 20, 1998.

example, Toyota Motor Sales USA uses VSATs for communicating among offices and dealers around the country. Without VSATs, most of these calls would likely be carried on the publicly switched telephone networks of incumbent local exchange carriers. The number of VSAT systems has increased markedly in recent years, and recent innovations in satellite technology – in the areas of digitalization, data compression, miniaturization and improvements in signaling processing capabilities – will generate huge increases in transmission capacity and large decreases in costs and prices.

Q. HOW DO DATA SERVICES COMPETE WITH LOCAL EXCHANGE SERVICE?

A. Voice service delivered over the public switched network is increasingly competing with data services, such as faxes and emails. The number of emails sent per day is growing at 55 percent annually and at that rate would reach 5 *billion* messages per day by the year 2005 in the U.S. alone.[53] Moreover, many data services, such as faxes and emails, are rapidly moving off of the public switched network and onto Internet and wireless networks, sometimes bypassing the local exchange altogether.[54] For example, Forrester research estimates that Internet telephony will divert $3 billion of normal telephone traffic.[55] Dataquest predicts that the number of fax pages sent over the Internet rather

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[53] "Telecom Restructured," *Forrester Research,* September 1997, p. 5. Also, George Gilder predicts that if growth in Internet usage continues at current rates, voice services will fall to less than 1 percent of telecom traffic by 2004. See "The Fiber Baron," *The Wall Street Journal*, October 6, 1997, p. A22.

[54] Email and Internet faxes not only substitute for the local provider's retail services, in terms of intraLATA toll traffic, they also result in a loss of wholesale revenue through reduced switched access traffic. According to U S WEST's Combined Statement of Operations for the fourth quarter of 1997, switched access revenue accounts for approximately 30 percent of U S WEST's total revenue.

[55] "Telecom Restructured," *Forrester Research,* September 1997, p. 6.

than the public network will increase over one hundred fold from 44 million today to 5.6 billion in just three years.[56]

Consumers in Nebraska are well positioned to take advantage of these alternatives to traditional telephone calls. The vast majority of consumers in Omaha will have high speed Internet access, through cable modems, by the end of this year; some customers will have two providers. Consumers in rural areas also have easy access to the Internet; an estimated 99 percent of the telephone consumers in Nebraska have the availability of access to the Internet with a local telephone call.[57]

Data communications services are the fastest growing services in the telecommunications industry, and none of this traffic is reflected in the standard measures of competition based on access lines. While these services are not perfect substitutes for voice services, it is clear that the degree of substitutability is increasing over time. According to a report by the International Engineering Consortium, traditional wireline voice service, which today generates more than 80 percent of total RBOC and IXC revenue, will amount to less than 50 percent by 2010.[58]

Q. WHAT ARE THE IMPLICATIONS OF THESE ALTERNATIVE FORMS OF SERVICES?

A. There are many products and services that compete, to different degrees, with local exchange service. The proliferation of these services, coupled with the direct competition

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[56] "Dataquest Says Internet Faxing is on the Way to Provide Low-Cost Alternatives to Traditional Faxing," *Dataquest Press Release*, November 10, 1997.

[57] "Nebraska Among Internet Access Leaders," *Nance County Journal*, April 1, 1998.

[58] Robert M. Janowiak, Massoud Saghafi, and Jagdish N. Sheth, "Communications Outlook: Competition, Growth, and Consolidation," *Annual Review of Communications,* International Engineering Consortium, Volume 50, 1997.

in traditional local exchange services by the CLECs, provides a powerful competitive force in local exchange markets.

D. ECONOMIC ATTRACTIVENESS OF LOCAL EXCHANGE MARKETS

Q. WHY IS IT IMPORTANT TO CONSIDER THE ECONOMIC ATTRACTIVENESS OF LOCAL EXCHANGE MARKETS WHEN ASSESSING OPENNESS TO COMPETITION?

A. There are inherent differences in economic conditions within and across states that can affect the attractiveness of local telecommunications markets to competitive entrants. These differences are the result of several interrelated factors, including population demographics, economic development, and physical geography which are collectively encompassed by the term "economic geography." Specifically, the population size and density of a particular market, as well as the intensity of telecommunications usage within that market are important factors that can influence the attractiveness of a local exchange market.

In addition, different markets will have different degrees of attractiveness to different competitors depending on the competitors specific assets and core competencies. For example, a competitor with existing assets in a particular market or a geographically proximate market will find that market more attractive than a competitor with no assets in or near that market. These factors play a vital role in determining where and how competition develops in a network industry such as telecommunications.

Q. HOW DO DEMOGRAPHIC CONDITIONS AFFECT THE ATTRACTIVENESS OF A LOCAL EXCHANGE MARKET?

A. Demographic factors have powerful implications for both the costs of and revenues from serving a local exchange market. On the cost side, a network industry exhibits significant economies of scale, meaning that as the quantity of the service produced increases (as more subscribers are connected to the network) the average cost per unit of output produced (the cost of serving a single subscriber) declines. In high density areas, such as urban centers, a single switch can serve tens of thousands of access lines, and a five-mile fiber ring can carry the traffic for hundreds of thousands of end-users, or a feeder cable can serve thousands of residential customers. Thus, high population densities enable entrants to address a large number of customers at a relatively low unit cost.

The absolute size of a market and the density of the population within that market are important factors in determining the revenue potential of providing local exchange service in that market. Telecommunications revenues tend to be highly concentrated in small geographic areas throughout the U.S. For example, a study conducted by InContext, Inc., shows that 30 percent of business revenues in the ten largest states come from about 1 percent of the land mass and 75 percent of these revenues are generated by only 8 percent of the land mass.[59] Because revenues are highly concentrated in telecommunications markets, these markets are easily segmentable and targetable. A rational competitor does not need to serve all geographic or customer segments to compete effectively in one or a few segments. Instead, the rational entrant will target its initial entry at the small share of the customers who account for a large share of revenues and a small share of costs.

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[59]Based on an analysis conducted by InContext. See the *Expert Reports of Professor Robert G. Harris in Support of the United States Telephone Association, in the Matter of Price Cap Performance Review for Local Exchange Carriers,* CC Docket No. 94-1, May 9, 1994.

Q. IS THERE EVIDENCE THAT DEMONSTRATES THE IMPACT OF DEMOGRAPHICS ON THE ATTRACTIVENESS OF LOCAL EXCHANGE MARKETS?

A. Yes. Because large urban markets with high population density offer entrants the greatest potential return on investment, these areas are seeing the highest rate of local entry by CLECs and other telecommunications providers throughout the U.S. Figure 2 shows a map showing population density and local networks being deployed by the top 12 CLECs throughout the country. Figure 3 provides a similar picture for Nebraska. The correlation between population density and CLEC network development is evident. Moreover, those markets with the largest urban population are experiencing a higher rate of entry. The reasonable conclusion from these figures is that economics and demography are important factors in CLEC's investment decisions.[60]

Q. HOW DOES THE DISTRIBUTION OF BUSINESSES BY INDUSTRY SECTOR AFFECT THE ECONOMIC ATTRACTIVENESS OF A LOCAL TELEPHONE MARKET?

A. In general, the larger, more densely populated local exchange markets tend to present the greatest revenue potential for new entrants. However, a relatively small local exchange market can also present an attractive entry opportunity if its population tends to demand a relatively high level of telecommunications services. For example, local markets with concentrations of business in financial services, insurance, health care, telemarketing, Internet services and other information-related service offer potentially large revenue

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[60] This investment strategy has been explicitly recognized by competitors in the industry, such as RCN, a facilities-based CLEC in the Northeast, which explains that it "has targeted the densely populated Northeast corridor representing approximately 28 percent of the nation's telecommunications usage, but only 4 percent of its geography." See *RCN En Banc Presentation to the FCC,* January 29, 1998.

streams for new entrants that provide local services or integrated packages of local, long distance and data services.

Q. HOW DOES THE ATTRACTIVENESS OF A MARKET VARY BY COMPETITOR?

A. Due to distinct assets, core competencies, and marketing strategies, different competitors have different competitive advantages in different markets. The existence of network facilities in a particular market, for example, can lower costs of production, representing a significant source of competitive advantage. Similarly, an established customer base and/or recognized brand name can be a competitive advantage because they lower marketing costs. Also, entrants with an established customer base already have operational systems in place, such as billing systems, which can further lower the cost of entry.

Q. HOW DOES A COMPETITOR SELECT MARKETS TO ENTER?

A. In making investment decisions, business managers are subject to the discipline imposed by the financial objectives and alternative investment opportunities of their shareholders and creditors. Business managers are thus directly accountable to owners and lenders for creating economic value. Due to capital and other resource constraints, companies must prioritize their investments, deciding which specific projects to undertake or markets to enter. Businesses generally focus their investments in areas where they expect to receive the highest return, within the bounds of the company's other financial objectives (e.g., the degree of risk the company is willing to take). When local exchange competitors decide whether or not to enter a given geographic market, they consider how factors like economic geography, population demographics, the types of businesses and consumers

present, and their own competitive strengths and weaknesses will affect their likely profitability within that market and compared to other possible markets.

Q. WHAT ARE THE IMPLICATIONS OF THIS ANALYSIS FOR LOCAL EXCHANGE ENTRY IN NEBRASKA?

A. Economic geography and other factors affecting the attractiveness of markets provide insights into the patterns of local exchange entry in Nebraska. In Nebraska, Omaha provides an attractive market. Although Omaha is a relatively small market in terms of overall population, the level of telecommunications usage among businesses and consumers is high enough to attract entry by the large national CLEC TCG. According to TCG, "Omaha is a very robust communications area," providing opportunities comparable to those in larger cities.[61] Cox, which already serves the Omaha cable franchise area, is extending the scope of services it provides into telephony.

Existing regional telecommunications providers in Nebraska can find attractive entry opportunities in smaller local markets in the state. Because regional competitors, such as independent LECs, have both existing network facilities nearby, as well as operational assets and brand name recognition, these competitors can enter smaller geographic markets in Nebraska at a lower incremental cost than national entrants. Moreover, these regional competitors have a stronger competitive position within the region's local markets than they do in markets outside of Nebraska where they lack these assets. As a result, competitors such as Aliant and NT&T are planning to provide smaller communities in Nebraska while larger, more nationally focused entrants are not.

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[61] "TCG's Telecommunications Switch Brings Local Telephone Competition to Omaha," *Midlands Business Journal,* May 22-28, 1998.

Some communities in Nebraska are not being targeted by CLECs. This is not surprising given the relatively small profit potential in the rural communities. Limited competition from traditional service providers, however, does not mean that consumers in the rural areas will have no local service options. Increasingly, alternative forms of local exchange service such as email, Internet fax and wireless services, are providing customers with choices. The advanced telecommunications infrastructure in Nebraska will facilitate the development of alternative forms of local service competition.

Q. GIVEN THAT SOME COMMUNITIES ARE NOT EXPERIENCING ENTRY BY CLECS, HOW CAN THIS COMMISSION BE ASSURED THAT U S WEST'S LOCAL EXCHANGE MARKETS IN NEBRASKA ARE OPEN TO COMPETITION?

A. The current and planned entry by Cox, TCG, Aliant and other CLECs in communities throughout U S WEST's service area demonstrate that U S WEST's local exchange markets in Nebraska are open. In addition, as explained in the following section, a combination of fundamental changes in both the structure and economics of the industry, as well as the regulatory environment have resulted in the effective elimination of barriers to entry, thereby ensuring that local exchange markets are open today and will remain open in the future.

C. BARRIERS TO ENTRY

1. Introduction

Q. HOW HAVE BARRIERS TO ENTRY IN LOCAL EXCHANGE SERVICES BEEN EFFECTIVELY ELIMINATED?

A. The interconnection, unbundled element and resale provisions of the Act substantially reduce barriers to entry by requiring incumbent LECs to share economies of scale and scope associated with the network. Section 271 of the Act ensures that an RBOC has complied with these provisions before it is entitled to enter the interLATA market. Through this application, U S WEST witnesses demonstrate that U S WEST has met these requirements. In addition, fundamental changes in the structure and economics of the industry ensure that all of U S WEST's local exchange markets are open to competition and will remain open.

2. Regulatory forces

Q. PLEASE EXPLAIN IN MORE DETAIL HOW THE TELECOMMUNICATIONS ACT HAS REDUCED BARRIERS TO ENTRY.

A. The Telecommunications Act has several provisions aimed specifically at opening local exchange markets. First, the Act requires that the incumbent local exchange carrier interconnect its network with the networks of entrants in order to exchange traffic across networks so that customers of a new entrant can complete calls to customers of U S WEST or any other carrier. The interconnection obligation, combined with the safeguards against discrimination discussed in Section V, provides a framework whereby the economies of a ubiquitous local exchange network are available to all entrants.

Second, the Act requires that the incumbent make its retail telecommunications services available to competitors at wholesale prices to facilitate resale of those services. By purchasing services at a discount and reselling them, entrants can offer customers the same retail telecommunications services as the incumbent without having to invest in infrastructure.

Third, the Act requires that incumbent local exchange carriers allow entrants to use parts of the incumbents' networks, specifically, providing "nondiscriminatory access to network elements on an unbundled basis at any technically feasible point at just, reasonable, and nondiscriminatory rates, terms, and conditions."[62]

Q. WHAT ARE THE PRICING REQUIREMENTS FOR INTERCONNECTION, UNBUNDLED ELEMENTS AND RESALE?

A. The Act calls upon the state Commission to determine that rates for interconnection and access to unbundled elements are "just, reasonable, and nondiscriminatory" and based on the cost of providing the interconnection or network element.[63] Wholesale prices for local exchange service must be based on retail rates, excluding costs associated with retail services that would be avoided in the provision of wholesale services.[64] In addition, the FCC determined that wholesale discounts apply even to prices that are already discounted, for example, through volume or term commitments.[65]

Q. WHAT IS THE ECONOMIC BASIS FOR THESE PRICING REQUIREMENTS?

A. The intent of these requirements is to establish prices for interconnection, UNEs and resale that will encourage entry. The methodology used to establish prices should follow an internally consistent and sound economic approach for evaluating and determining the terms and conditions for interconnection agreements. This entails the use of a forward looking, but realistic, economic cost methodology.

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62 47 U.S.C. §251(c)(3).

63 47 U.S.C. §251(c)(2)(D). See also, 47 U.S.C. §252(d)(1), (1)(A)(i), (1)(A)(ii).

64 47 U.S.C. §252(d)(3).

65 See, Iowa Utilities Board v. FCC, 120 F.3d 791, 793-96 (8th Cir 1997).

Q. ARE U S WEST'S PRICES SET AT LEVELS THAT WILL PROMOTE ENTRY?

A. I believe so, in the following two respects. First, with very few exceptions, the rates adopted in U S WEST's interconnection agreements with Cox and TCG that I have reviewed are set equal to forward looking economic costs, as estimated by U S WEST.[66] These price levels afford prospective entrants a fair opportunity to compete through the purchase of various U S WEST network elements and wholesale services.

Second, I believe it is important to recognize that the underlying process by which these unbundled network element and wholesale service prices were determined has served to promote entry. Even though all prices have not been adopted from a single model, based on my experience in arbitrations in Nebraska and other U S WEST states, the models put forward have been designed using forward looking platforms. Each is put forth as a model that is based on incremental costs, building an entire network from scratch, using existing wire centers and the best available technology. In its evaluation of negotiated and arbitrated prices, the Commission has acknowledged its obligation to ensure that prices comply with the standards of the Act and are based on forward looking economic costs.[67] The methodology for setting prices is discussed further in Exhibit RGH-2.

Q. DO THE COX AND TCG AGREEMENTS CONTAIN INTERIM RATES?

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[66] In the Cox agreement, the prices for call termination and tandem switching include the cost of amortization of reserve deficiency over a transitionary period. In addition, the residential resale discount well exceeds the retailing costs U S WEST estimates that it avoids when providing the wholesale service. See *Agreement for Local Wireline Network Interconnection and Service Resale Between Cox Nebraska and U S WEST*, Appendix A, June 2, 1997; and see *In the Matter of Cox Nebraska v. U S WEST to Establish an Interconnection Agreement*, November 18, 1997, p. 5.

[67] See, for example, *In the Matter of TCG Omaha v. U S WEST Communications for the Arbitration of the Rates, Terms and Conditions of Interconnection with U S WEST Communications Inc.*, Application No. C-1379 before the Nebraska P.S.C., March 4, 1997, p.2; and *In the Matter of Cox Nebraska v. U S WEST Communications for the Arbitration to Establish an Interconnection Agreement with U S WEST Communications Inc.*, Application No. C-1473 before the Nebraska P.S.C., July 15, 1997, p.2.

A. Yes. As explained by Alan L. Bergman, both the Cox and TCG agreements include a provision that will update the interconnection, unbundled network element and wholesale prices to reflect changes adopted by the Commission in the Cost Docket, C-1415.[68]

Q. DO INTERIM RATES COMPLY WITH THE CHECKLIST REQUIREMENTS OF THE ACT?

A. I believe so. The FCC has discussed interim pricing in two contexts in its Ameritech 271 order. First, the FCC confirmed that interim rates can be used to satisfy the "competing provider" requirement (Section 271(c)(1)(A)).[69] Second, although the FCC stated that "we are not at this time determining whether the agreements must contain prices adopted in permanent cost proceedings, as opposed to interim prices, in order to establish checklist compliance,"[70] it specifically stated that it is important to determine whether the interim rates are based on existing cost studies. The basis for setting the interim rates in Nebraska is consistent with both the requirements of the Act, and the FCC's own guidelines.[71]

Although interim, the prices in the Cox and TCG agreements: (1) were derived from forward looking cost studies, using the best available information; (2) were determined through a process of negotiation and arbitration designed to ensure that their terms and conditions comply with the standards of the Act; and (3) provide a fair opportunity for

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[68] See, for example, *In the Matter of Cox Nebraska v. U S WEST Communications for the Arbitration to Establish an Interconnection Agreement with U S WEST Communications Inc.*, Application No. C-1473 before the Nebraska P.S.C., ¶ 18, July 15, 1997.

[69] The FCC states that "we reject [the] contention that Ameritech cannot be found to have entered into a binding agreement with competing providers until the agreements include final cost-based prices." *In the Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide InterLATA Service Originating in Michigan*, CC Docket No. 97-137, May 21, 1997.

[70] *In the Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide InterLATA Service Originating in Michigan*, CC Docket No. 97-137, May 21, 1997.

[71] See the discussion in Exhibit 2.

competitors to enter and compete in the local exchange in Nebraska. Finally, it is reasonable for these costs to change, to incorporate additional information and analysis about the costs of building and maintaining a network, and the costs of providing services. For these reasons, the FCC should accept interim rates for the purposes of Section 271 approval.

Q. WHAT ARE THE IMPLICATIONS OF THE FCC'S REQUIREMENTS REGARDING INTERCONNECTION, UNES AND RESALE?

A. The FCC's requirements are intended to "jump start" competition; they enable new entrants to compete on reasonable terms before they have completed network buildouts or achieved a significant market share. Some of the terms and conditions associated with the FCC's requirements for unbundling and resale go beyond accepted competition standards in other industries. First, in similar industries, such as the railroad industry, incumbents have been required to provide access to facilities only if and when it can be demonstrated that those facilities are "essential" to the competitor. The Telecommunications Act, however, requires that the incumbent LEC (ILEC) provide access to elements that are not, by definition, essential facilities.[72] For example, because entrants like the IXCs already own feature-rich switches and numerous carriers are reselling switching capability, switches are not an essential facility, and yet switching is a required unbundled element.

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[72] In antitrust policy, the essential facilities doctrine requires that the owner of a facility provide access to that facility if it is deemed "essential" for competition in a particular market. As commonly employed by the courts, the essential facilities standard has three key elements. First, the facility must be and remain unique (i.e., not economically replicated by competitors either through construction of their own facility or through third party suppliers). Second, it must be centrally located in the vertical production process (i.e., it is a necessary input for competitors to compete in a relevant output market). Third, denial of access to the input would demonstrably impede competition in the specified output market. Based on this definition there is only one element of local exchange service which is unquestionably an essential facility – the ability to terminate calls on a competitors network.

Second, it is common practice in most industries to provide wholesale discounts based solely on volume and term commitments, because cost savings arising from scale economies and reduced risk allow a firm to offer larger discounts for higher guaranteed volumes. Consequently, small resellers are forced to compete with small price-cost margins or form alliances with other resellers to create higher volumes by aggregating traffic.[73] In interpreting the Telecommunications Act, the FCC sets a different standard. The FCC Interconnection Order requires that incumbent LECs offer a wholesale discount to all competitors, independent of volume commitments, and to provide additional discounts off of existing volume-based discount rates.

Q. HAVE STATE REGULATORY POLICIES IN NEBRASKA REINFORCED THE PROVISIONS OF THE TELECOM ACT?

A. Yes. Legislative Bill 660 declares that "it is the policy of the state to ... promote fair competition in all Nebraska telecommunications markets in a manner consistent with the federal act," and authorizes the state commission "to do all things reasonably necessary and appropriate to implement the federal Telecom Act." By instituting a framework for deregulation that promotes rate rebalancing, this legislation complements the intent of the Telecommunications Act to open all segments of the telecommunications business to competition.

3. Industry structural change

Q. PLEASE EXPLAIN HOW CHANGES IN THE STRUCTURE OF THE TELECOMMUNICATIONS INDUSTRY HAVE REDUCED BARRIERS TO ENTRY.

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[73] One such alliance, The Telecom Buying Alliance, is being formed in the long distance industry for exactly this purpose. See, "Resellers Make a Stand: No More Discriminatory Wholesale Pricing," *Phone+*, July 1997, p. 34.

A. In the past, competitive entry into local exchange markets, even where not precluded by law, was extremely difficult due to the structure of the industry. Thirty years ago, the telecommunications industry in the U.S. was dominated by highly integrated companies, such as AT&T and GTE. AT&T, for example, controlled all aspects of the telecommunications market including the physical network, delivery of services, and customer interactions. In economic terms, AT&T was vertically and horizontally integrated – AT&T supplied all of its own inputs of production and provided the entire range of telecommunications output services including local and long distance. Since that time, many forces have come together to break up this structure, effectively splitting the industry into multiple discrete markets. Now, in some geographic areas, the market boundaries are blurring, as multiple competitors are beginning to package a wide spectrum of services, including local and long distance, to consumers.

Q. WHAT FORCES HAVE INFLUENCED THE TRANSFORMATION OF THE TELECOMMUNICATIONS INDUSTRY?

A. Since the 1960s, the forces of technology, market demand and public policy have pulled apart the tightly bound structure of telecommunications and transformed it into a less integrated industry. Technological changes have caused fundamental shifts in industry economics, stimulating entry and increasing actual and potential competition within and across modes of communications. Among the most critical of these "competition enabling" developments were rapid advances in microelectronics, the development of microwave transmission, the development of fiber optics, and dramatic improvements in wireless. As a consequence of these and other fundamental advances in communications and information technologies, innovation is the dynamic force generating changes in market conditions, competition, and public policies. This technological dynamic is

increasingly powerful because innovation is occurring at an accelerating rate, with no sign of abating.

Customer demand for telecommunications products and services has also undergone fundamental change. First, consumer demand for a much wider range of telecommunications products and services is both increasing and intensifying. This is evidenced by the proliferation of new communications devices (such as pagers, Personal Digital Assistants, SmartCards, cable modems, and smart/video phones) and the proliferation of advanced services (such as high-speed Internet access, Global Positioning Systems for automobile travel, and the integration of communications and energy services). Second, customer demand is shifting along four key dimensions: from voice to data services; from stationery (wireline) to mobile (wireless) services; from individual to packaged or integrated services; and from basic to value-added services. These changes in demand are creating new opportunities for competitors.

There have been several important public policy changes that have influenced the transformation of the telecommunications industry including: a series of legal and regulatory decisions in the late 1960s that created an independent CPE (Customer Premise Equipment) market; the MFJ in 1984 which finalized the separation of long distance transport from the rest of the telecommunications markets; and public policy shifts in the late 1980s that fostered the growth of competitive access providers. The Telecommunications Act of 1996 accelerated the move toward competitive telecommunications markets by eliminating many of the legal and regulatory impediments to competition and entry across lines of business.

Q. WHAT HAS BEEN THE EFFECT OF THESE FORCES ON THE INDUSTRY STRUCTURE?

A. The forces of technology, market demand and public policy change have brought about the de-integration of the telecommunications industry and have created multiple distinct telecommunications markets in the place of one highly integrated market. De-integration has had a profound effect on the competitive environment of the telecommunications industry. Most importantly, it has significantly reduced barriers to entry. When industries are highly integrated, a firm cannot enter unless it is able to provide the full range of inputs necessary to produce all products or services. In today's telecommunications industry, competitors can target their entry to specific market segments where they have a competitive advantage, minimizing the resources and time required to enter.

De-integration also creates a wide range of entry paths. Competitors can enter new markets as niche players, full service providers, or anywhere in-between. By combining components from several different suppliers and providers, each new entrant can pursue its own unique entry strategy, increasing its chances of success. For example, a new entrant in a local telephone market can choose from several different suppliers of rights-of-way, fiber, switches, and other telecommunications inputs, including unbundled elements from the ILEC, in order to create a local service offering. That same new entrant may choose to partner with other retail providers of wireless services or Internet access, to create a bundled service offering in response to consumer demand for one-stop shopping. Thus, even the smallest new entrant has the potential to compete with the broad service offerings of the largest competitors.

Q. HOW ARE CLECS TAKING ADVANTAGE OF THE REGULATORY AND STRUCTURAL CHANGES IN THE TELECOMMUNICATIONS INDUSTRY TO ENTER NEBRASKA'S LOCAL MARKETS?

A. One of the most significant implications of the de-integration of the telecommunications industry is that multiple suppliers now exist in each of the input markets necessary to assemble a local service offering. This enables an entrant to assemble a local service offering tailored to competitive strengths. In Nebraska, CLECs are taking advantage of de-integration through a variety of entry paths.

Aliant, for example, has put together its competitive local service offering by building its own fiber network in certain areas and leasing fiber capacity from TCG in others.[74] In addition, Aliant will also become a supplier of telecommunications inputs to other carriers. Aliant recently constructed a fiber network from Omaha to Kansas City on which it plans to lease fiber transport to other carriers, including CLECs.[75] TCG has assembled its local service offering largely by building its own fiber facilities and installing its own switch. However, TCG is also using wireless inputs to connect customers to its network.[76] As mentioned, TCG acts as a supplier of network inputs by leasing its fiber facilities to other carriers, such as Aliant. Cox has assembled its local service offering by upgrading its cable network to provide telephony. The diverse entry paths of these three carriers demonstrates how the addition of CLEC facilities further promotes the openness of Nebraska's local exchange markets.

These CLECs are also taking advantage of regulatory and structural changes that have created multiple output markets for telecommunications services by combining these services into full-service packages. Aliant, for example, is combining its competitive local service offerings with its existing cellular and business systems services, as well as long distance and Internet access, in order to offer a wide range of services to its

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[74] "Aliant Maps Growth," *Omaha World-Herald,* April 23, 1998.

[75] "Aliant Communications Announces Expansion of Fiber Optic Network," *PR Newswire,* December 16, 1997.

[76] "Teleport Girds for Competition," *Omaha World-Herald,* September 7, 1997.

customers. Cox is offering packages of telecommunications service, cable TV, and Internet service to residential customers in Omaha.

It is clear that new entrants in Nebraska, through self-provisioning, partnerships, and acquisition are assembling the inputs necessary to create successful local service offerings in competition with U S WEST. More importantly, the nature and dynamics of the competitive environment ensure that these entry opportunities will be available both today and in the future.

IV. BENEFITS OF U S WEST LONG DISTANCE ENTRY

A. INTRODUCTION

Q. HOW DO YOU EXPECT CONSUMERS TO BENEFIT FROM U S WEST'S ENTRY AS AN INTERLATA SERVICE PROVIDER?

A. Consumers will benefit from increased competition in local exchange services, long distance services and integrated packages of telecommunications services. The benefits of increased competition in each of these areas arise from increased choice for all customers in U S WEST's service areas, lower prices and/or increased quality of service, and increased innovation in telecommunications products and services.

Q. PLEASE PROVIDE AN OVERVIEW OF THE BENEFITS TO CONSUMERS.

A. First, U S WEST plans to compete for business and residential customers in its service areas with a range of telecommunications service packages. The strong consumer demand for service packages in U S WEST's territory and nationwide is well established. Independent local exchange carriers in Nebraska are permitted to offer packages to their customers that include interLATA services, which Aliant, GTE, and others are currently

providing within their designated service areas. Moreover, Cox and Aliant, who have existing assets in and nearby U S WEST's service area, are offering packaged services to compete for U S WEST's existing base of customers. TCG has also announced that it will be providing packages of services to business customers in Omaha. U S WEST should be allowed to compete, with comparable offerings, in its Nebraska service areas; such competition for packaged services is exactly in line with the purpose and intent of the Telecom Act and would unambiguously benefit consumers through lower prices, greater choice, and improved service quality.

Second, the interLATA market remains highly concentrated in Nebraska, and, except for the highest volume customers, interLATA prices exceed competitive levels. U S WEST's history of providing ubiquitous service and its strong brand recognition place U S WEST in a unique position to compete vigorously with the major IXCs, initially as a reseller, and in time using their own facilities, causing interLATA prices to fall.

Third, based on the experience in Connecticut, it also appears likely that U S WEST's ability to offer integrated service packages in Nebraska will accelerate plans by the major IXCs to follow suit and enter as local exchange competitors in Nebraska.[77] As local exchange markets are open in Nebraska and adequate regulatory safeguards are in place, allowing U S WEST to expand its offerings will increase competition in Omaha, and increase the likelihood of competition in more rural parts of Nebraska where CLECs have not yet decided to enter.

Finally, U S WEST has demonstrated its commitment to working together with the state to upgrade the communications infrastructure in order to bring advanced communications

[77]Certainly, the acquisition of TCG strengthens AT&T's position as a local exchange entrant in Omaha.

services to Nebraska's consumers. Section 271 approval offers U S WEST the opportunity to continue to invest in infrastructure, extending the benefits of advanced communications across LATA boundaries.

B. INCREASED COMPETITION FOR INTEGRATED SERVICES

Q. PLEASE DESCRIBE CONSUMER DEMAND FOR INTEGRATED SERVICES.

A. Studies of consumer preferences have indicated a strong demand for integrated service offerings. Through these packages, customers are seeking access to a range of communications services, simplicity in obtaining these services, and lower prices. A study by MTA-EMCI conducted in August of 1996 found that over 80 percent of all consumers would like to buy a package of two or more telecommunications services from a single provider.[78] A consumer survey by J.D. Power reveals that 65 percent of consumers would be interested in purchasing *all* of their telecommunications services from a single provider.[79] In a survey conducted throughout its service areas, U S WEST found that 86 percent of its residential customers are interested in bundling local service with at least one other telecommunications service.[80]

Q. HOW CAN U S WEST RESPOND TO THIS DEMAND?

A. Granting interLATA authority to U S WEST will create an additional firm in Nebraska that is willing and able to provide packages of services to all consumers in its service areas. U S WEST plans to offer these packages under a single brand name to a wide

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[78] "Branding and Bundling Telecommunications Services: Telephony, Video and Internet Access," *MTA-EMCI Telecommunications Consultants,* August 1996, p. 142.

[79] "J.D. Power and Associates Analysis Reveals: Long Distance Carriers Prime for Local and Long Distance Telephone Market Share," *J.D. Power and Associates News & Information Release,* February 27, 1997.

[80] Customer Value Assessment: Residential Customers, *U S WEST Communications,* Third Quarter 1997 Report.

range of customers. Because U S WEST already serves residential customers and sends them a bill, the incremental cost of providing additional services is much smaller than it would be for an entrant with no existing presence in Nebraska. In addition, U S WEST's well-known brand name throughout its service area in Nebraska will reduce marketing costs associated with the extension of service offerings to harder-to-reach customer segments in more rural areas.

Q. WHAT DID THE CONSUMER RESPONSE TO THE RECENT JOINT MARKETING ALLIANCE BETWEEN U S WEST AND QWEST COMMUNICATIONS SUGGEST?

A. Through a marketing alliance, U S WEST and Qwest offered a program called Buyer's Advantage, which was designed to provide consumers with convenience and attractive long distance pricing. While providing clear benefits to customers, this alliance does not provide customers with a truly integrated package. With this alliance, U S WEST is not afforded the full flexibility to customize its packages in response to changing customer demands, nor does it allow U S WEST to provide fully integrated service.

Even with these limitations, the initial response to the U S WEST-Qwest offering was very strong. The companies reported that in the first three weeks of the program, 100,000 new customers signed up for Qwest service.[81] This provides concrete market evidence of consumer demand for simplicity of service offerings and lower prices; it also indicates that allowing U S WEST to offer its own packages would greatly serve the interests of consumers.

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[81] "Customer Demand Reaches 100,000 Mark for Buyer's Advantage Program; Offering U S WEST Local and Qwest Long Distance Service," *Business Wire,* May 27, 1998.

Given the recent injunction, it is unclear whether the U S WEST-Qwest alliance will continue to be an option for consumers. Independent of whether RBOCs are permitted to form alliances to offer integrated local and long distance services, I believe that granting U S WEST authority to provide interLATA service through its own subsidiary would have additional benefits. Section 271 approval would enable U S WEST to achieve greater cost efficiencies associated with economies of scope and to more flexibly augment its local/long distance offerings with the full range of service packages.

C. INCREASED COMPETITION FOR LONG DISTANCE SERVICES

Q. DO YOU BELIEVE U S WEST ENTRY WILL HAVE A SIGNIFICANT COMPETITIVE IMPACT ON NEBRASKA'S LONG DISTANCE MARKET?

A. Yes. U S WEST entry into interLATA services will have a significant competitive impact in Nebraska. Ultimately, the benefits that U S WEST can bring to the interLATA market for Nebraska-originating calls stem from four factors: (1) this market currently is not fully competitive; (2) U S WEST will be an efficient and effective competitor in the market; (3) U S WEST will be prepared to offer competitively priced packages of a wide range of telecommunications services to Nebraska consumers; and (4) these benefits will be passed on to a broader group of customers in Nebraska, not solely to the high volume business users.

Q. IS U S WEST IN A STRONG POSITION TO INCREASE COMPETITION IN THE INTERLATA MARKET?

A. Yes. U S WEST is in a strong position to increase competition in the interLATA market. One major difference between U S WEST and other potential competitors is that U S WEST can realize legitimate economies of scale and scope in serving the interLATA

market. I use the word "legitimate" to emphasize the fact that U S WEST's relatively low-cost position in the interLATA market is not based on cross-subsidies from local exchange or access services, nor on any discriminatory treatment of IXCs; rather, U S WEST's ability to serve interLATA customers at low incremental cost reflects true economies of scale and scope.

Q. HOW WILL U S WEST USE ITS ECONOMIES OF SCALE AND SCOPE?

A. A key distinction between U S WEST and other *de novo* entrants into long distance is its brand recognition. Years of developing brand recognition makes it possible for AT&T, MCI and Sprint to attract customers for local service rapidly in areas they decide to pursue, without the lengthy adjustment period that a *de novo* entrant typically requires to establish a reputation for reliable service, customer responsiveness, and competitive prices. Likewise, U S WEST will be viewed as an attractive alternative to the IXCs immediately upon entering the long distance market because of its history of providing reliable and affordable service to residents throughout most of Nebraska. Market research shows that, in U S WEST's region, U S WEST is second only to AT&T in terms of brand awareness, consumer confidence, and brand image.[82]

The early success of the U S WEST-Qwest alliance indicates that U S WEST's brand name will enable it to compete effectively in the market for long distance services. With Section 271 approval, this benefit will extend to all of U S WEST's interLATA and packaged service offerings.

Q. COULD U S WEST REALIZE ECONOMIES OF SCALE IN THE PRODUCTION OF LONG DISTANCE SERVICES?

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[82] "1997 Brand Telco Study," *IDC/LINK Report,* March, 1997.

A. U S WEST could potentially achieve significant physical network economies between intraLATA and interLATA calling. For example, given the high fixed cost of a telecommunications network, increasing traffic volumes on an existing network reduces unit costs. Section 272 (b) of the Telecommunications Act and the FCC rules implementing the Act stipulate that U S WEST's long distance business be operated largely as a separate, arms-length subsidiary for at least three years subsequent to interLATA relief. For this reason, in the near term, U S WEST will not be able to take advantage of the economies of scale and scope associated with network facilities. The Commission should consider that timely approval of this application will promote competition the sooner U S WEST is given interLATA authority, the sooner it will be able to take advantage of efficiencies in production. Moreover, Section 271 approval will enhance competition by spurring IXCs to become more efficient in anticipation of U S WEST becoming facilities-based within a few years.

D. INTERLATA SERVICE COMPETITION AND PRICING

Q. HOW WOULD YOU ASSESS THE STATE OF COMPETITION IN THE MARKET FOR INTERLATA SERVICE?

A. As the Department of Justice stated in May of 1997, "interLATA markets remain highly concentrated and imperfectly competitive."[83] Exhibit RGH-3 shows that market concentrations are still quite high, nationally and in Nebraska. Although there is a fair amount of competitive activity among IXCs for the highest margin customers, it is clear that the majority of consumers, especially customers residing outside of the metropolitan

[83] Department of Justice Evaluation in Application of SBC Communications Inc. et al. Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in the State of Oklahoma, CC Docket No. 97-121, May 16, 1997, p. 4.

areas, have not benefited from the type of price decreases that would have occurred if markets were fully competitive.

As I describe below, the basic tariffed interstate prices of the major IXCs have increased steadily over the last several years, despite decreases in access charges and an increase in the number of long distance competitors. Furthermore, the rates IXCs charge for calls made within Nebraska are high, net of U S WEST's access charges, relative to other states. Despite a wide array of alternative discount programs, a significant fraction of consumers nationwide still pay these basic rates, due in part to price discrimination that is sustainable only in an oligopolistic industry. The percentage of Nebraska consumers subscribed to a discount calling plan is lower than the nationwide level. The result of this price discrimination is that only the minority has benefited from competition in long distance; the remainder stand to benefit significantly from increased competition.

Q. DESCRIBE THE RECENT TRENDS IN BASIC INTERSTATE RATES.

A. Over the last five years, basic interstate rates for the three largest IXCs increased between 12 and 32 percent, depending on the carrier. During the same time period, access charges, a major component of IXC costs, declined. Figure 4 illustrates these trends. In 1995, the FCC noted that this pattern of pricing "suggests that there may be tacit price coordination among AT&T, MCI and Sprint."[84]

Figure 4

Price of a 5-Minute Call from Omaha to Dallas [85]

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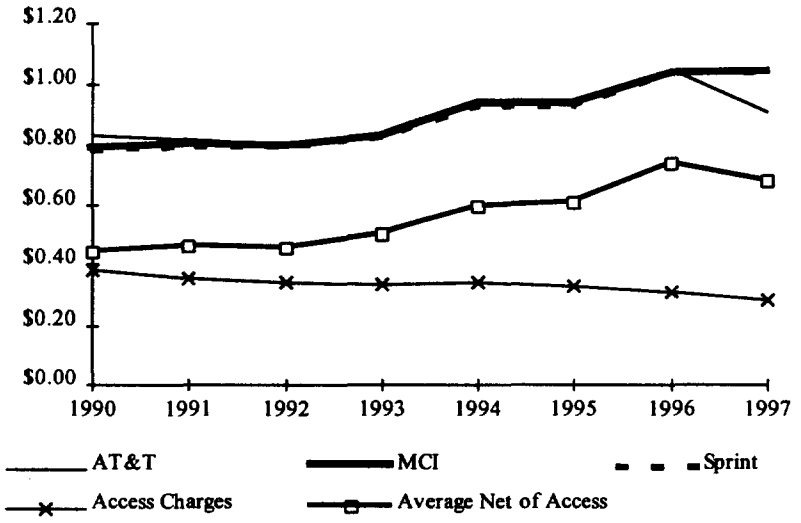
[84] *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier,* 11 FCC Rcd 3271, 3314 ¶82 (1995).

[85] Prices are a weighted average of time-of-day use according to the following formula based on "Average Daily Use" patterns as reported by the Telecommunications Research & Action Center (TRAC): 25 percent day; 45 percent evening; 30 percent night/weekend. See, "Tele-Tips," *TRAC,* September 1997, p. 2. (Hereinafter, "Tele-Tips"). Note that the weighted average does not adjust for the effect on peak time usage of AT&T's 1997 increase in the number weekday daytime hours. Average Net of Access Charges rates are weighted according to market share for AT&T, MCI, and Sprint.



Sources: Statistics of Communications Common Carriers, 1991-1995; Trends in Telephone Services, Table 40, FCC, March 1997; AT&T, MCI & Sprint Interstate Residential tariffs for 1997.

In oligopolistic markets, pricing patterns such as these can stem from behavior known as *conscious parallelism,* where no firm communicates with another, but each firm expects that each of its competitors is following the same unstated, yet common, policy. Price changes tend to be mirrored by other firms (giving rise to the "lockstep pattern"), and as long as participants believe that such mirroring will continue, their individual courses of action remain apparent. Prices can be raised; rivals will raise their prices in response, rather than hold them steady to gain market share. Conversely, there is a strong disincentive for lowering prices, as that would be expected to lead to a net loss; rivals would simply lower their prices, too, in order to maintain share. The end result is supracompetitive prices. In this kind of environment, prices tend to change slowly or only in response to new entry, as the sudden presence of a new firm of unknown aggressiveness disturbs this cozy equilibrium.

The existence of this type of behavior was acknowledged by former Sprint and Pacific Bell executive David Dorman: "Sprint and MCI seldom failed to follow an AT&Tled

retail long distance price increase. The benefits in terms of increased revenues... were simply too great to pass up,"[86] adding that, "the highprofile tussles over a relatively small class of preferred customers disguise ... the lack of any real price competition among the IXCs."[87]

Given this pricing pattern, it is not surprising that the FCC recently questioned the pricing behavior of these IXCs in letters sent to the chief executive officers of AT&T, MCI, and Sprint.[88]

Q. DO MANY CUSTOMERS PAY THESE BASIC RATES?

A. Yes. Nationwide, more than half of all residential long distance customers do not participate in any long distance calling plan.[89] This means that the majority of residential long distance customers are paying basic tariffed long distance rates. These customers are not receiving the price reductions promised by IXCs. To the contrary, these

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[86] Affidavit of David Dorman In Support of Pacific Telesis Group's Request for a Waiver to Permit It to Provide Interexchange Services to Customers in California, *United States of America v. Western Electric Co., Inc. and American Telephone and Telegraph Company, Civil Action 82-0192*, January 26, 1995, ¶ 13.

[87] Affidavit of David Dorman In Support of Pacific Telesis Group's Request for a Waiver to Permit It to Provide Interexchange Services to Customers in California, *United States of America v. Western Electric Co., Inc. and American Telephone and Telegraph Company, Civil Action 82-0192*, January 26, 1995, ¶ 14.

[88] Letters to the CEOs of AT&T, MCI and Sprint from FCC Chairman William E. Kennard, February 26, 1998.

[89] Dwight R. Lee, "Charging for Residential Long Distance Service: Who is Paying Too Much" *Prepared for the United Homeowners Association,* July 3, 1997 (reports that 60 percent of customers are not on a calling plan); Melanie Payne, "Research Can Save Money on Phone Calls," *The News and Observer – Raleigh, NC,* April 27, 1997, p. F5 (reports that 67 percent of customers are not on a calling plan); John J. Keller, "Telecommunications: Best Phone Discounts Go to Hardest Bargainers," *Wall Street Journal,* February 13, 1997, p. B1 (reports that more than half of AT&T's customers are not on a calling plan); Pradnya Joshi, "The Big Savings Maze – Long Distance Deals Abound if Customer Looks," *Newsday,* January 11, 1998, p. F8 (reports that 63 percent of customers are not on a calling plan).

customers are paying rates 12 percent to 32 percent higher than they were paying five years ago.[90]

Q. DID AT&T'S MOST RECENT TARIFF RESTRUCTURING BENEFIT THESE CONSUMERS?

A. Not necessarily. AT&T's recent tariff restructuring reduced its peak rate slightly, from 29 to 28 cents per minute. However, AT&T increased the number of peak hours during the week. Under the revised tariff structure, rates between 5 and 7 p.m., previously an off-peak calling period, increased from 17 cents a minute to 28 cents a minute, a 65 percent increase. The peak time was also extended by one hour in the morning from 8 a.m. to 7 a.m., and evening rates were substituted for the lower priced night-time rates for calls between 11 p.m. and 7 a.m. on weekdays. Despite AT&T's suggestion that its most recent tariff restructuring benefits consumers, there is evidence that AT&T has once again increased prices and broken its promise to pass access charge reductions on to consumers.[91]

Q. DO THE IXCS' DISCOUNT PROGRAMS EFFECTIVELY REDUCE CONSUMER PRICES?

A. IXC discount plans do reduce prices for some consumers, especially the highest volume consumers. For the majority of low and medium volume customers, however, discount prices have remained relatively constant over the last five years. Flat-rate plans, which

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[90]This 12 percent figure corresponds to the increase in AT&T's basic rates. This number understates AT&T's actual price increase as it does not account for AT&T's increase in the number of peak hours.

[91] According to consumer groups who track long distance rates, AT&T's recent price changes have increased rates. See "New Long Distance Fees = Higher Bills for Consumers," *Keep America Connected!*, May 25, 1998 and "Activists Seek AT&T Rate Rollback," *Los Angeles Times,* November 27, 1997, p. D3.

offer one flat rate all day, every day, are the most attractive calling plans for all but the high volume users, because these plans do not include a fixed monthly fee or a monthly volume commitment.[92] However, these flat rates are often close to or above tariffed evening and weekend rates.[93] At best, this flat price offers only modest savings for the average residential consumer who calls most frequently during in the evenings or weekends.[94] Overall, low and medium volume customers, which represent 70 percent of all residential long distance customers,[95] have not experienced price reductions commensurate with the concurrent decline in access charges. (See Figure 5).

Figure 5

Discount Prices of the Largest Long Distance Carriers from 1992 to 1997 for 90 Minutes of Calls[96]

		1992[97]	1997	Change
	AT&T			
	Discount Rates	$13.82	$13.50	-2.3%
	Access Charges	$6.08	$4.73	-22.2%

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92 The MCI One Advantage Plan requires a $5 minimum monthly bill.

93 These plans include: AT&T's One Rate plan, the MCI One Advantage plan, and the Sprint Sense Day plan. MCI and Sprint each currently offer a two-tiered flat-rate plan that includes a peak rate of $0.25 per minute and an off-peak rate of $0.10 per minute. Because peak periods on these plans have increased by three hours since 1992, the percent change in prices from 1992 to 1997 is dependent on the consumer's hourly calling patterns. If, hypothetically, calls are uniformly distributed within each rate period, average prices for the consumer subscribing to a 25/10 plan would have increased during this five year period.

94 Tele-Tips, *op. cit.*

95 Dwight R. Lee, "Charging for Residential Long Distance Service: Who Is Paying Too Much?" *Prepared for the United Homeowners Association,* July 3, 1997.

96 90 minutes of calling is divided equally among three mileage bands and weighted by time of day according to average daily use patterns as reported by TRAC. See, Tele-Tips, *op. cit.*

97 AT&T's 1992 and 1997 prices are calculated using AT&T's Reach Out America Half Hour plan and AT&T's One Rate plan, respectively; MCI's 1992 and 1997 prices are calculated using MCI's PrimeTime plan and the MCI One Advantage plan, respectively ; Sprint's 1992 and 1997 prices are calculated using the Sprint Select plan and the Sprint Sense Day plan, respectively.

	Rates Net of Access Charges	$7.74	$8.77	+13.3%
	MCI			
	Discount Rates	$13.38	$13.50	+0.9%
	Access Charges	$6.08	$4.73	-22.2%
	Rates Net of Access Charges	$7.30	$8.77	+20.1%
	Sprint			
	Discount Rates	$13.50	$13.50	0%
	Access Charges	$6.08	$4.73	-22.2%
	Rates Net of Access Charges	$7.42	$8.77	+18.2%

Sources: 1993 FCC Statistics of Common Carriers, Table 7.4; 1997 AT&T, MCI & SPrint Tariffs; Trends in Telephone Service, Appendix 9, FCC, March 1997.

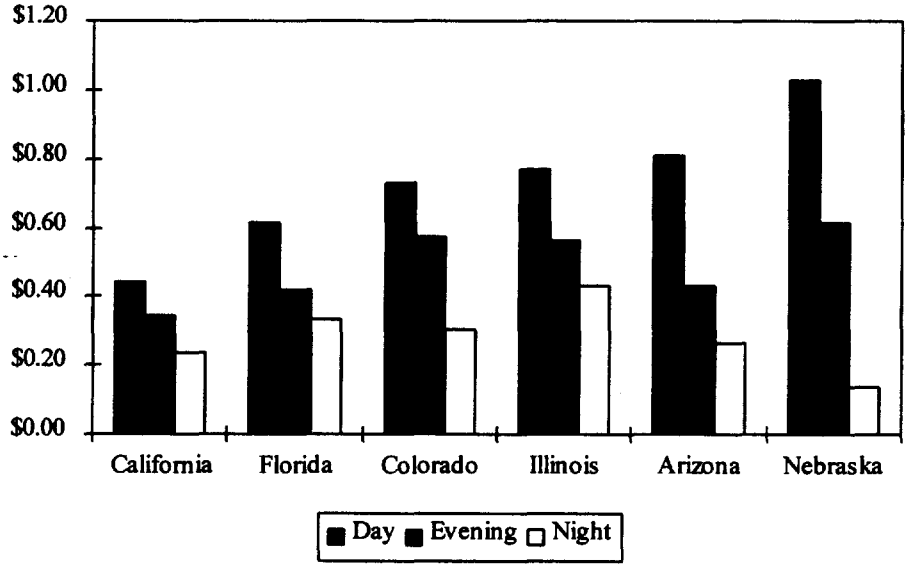
Q. HOW DO PRICES IN INTERLATA MARKETS IN NEBRASKA COMPARE WITH PRICES NATIONWIDE?

A. There are several factors which suggest that the long distance market in Nebraska is even less competitive than elsewhere. To begin with, while basic interstate long distance rates must be uniform across the country, IXCs have discretion in setting the tariffed prices for long distance calls made within a state. These intrastate calls are priced significantly higher in Nebraska than in other states around the country, even after accounting for differences in access charges. (See Figure 6) For example, after adjusting for intrastate

access charges, a daytime long distance intrastate call of the same distance and duration would cost, on average, more than twice as much in Nebraska than it does in California.[98]

[98] Prices are a weighted average of time-of-day use according to the following formula based on "Average Daily Use" patterns as reported by the Telecommunications Research & Action Center (TRAC): 25 percent day; 45 percent evening; 30 percent night/weekend. See "Tele-Tips." The weighted average prices for California and Nebraska are $0.44 and $1.03, respectively.

Figure 6
Average Price of an Intrastate Long Distance Call
for Selected States Net of Access Charges
(Call = 4 min.; Mileage Band = 149-292 / 200-292 miles)



Sources: AT&T, MCI, & Sprint Intrastate Residential tariffs; "The RBOC Intrastate Access Charge Book," Regulatory Research Associates, June 24, 1997.

Furthermore, a smaller fraction of consumers in Nebraska are receiving discounts for interstate calls. A recent survey conducted in the U S WEST states indicates that only 33 percent of consumers subscribe to a long distance calling plan, while recent estimates of nationwide calling plan subscription rates are between 45 to 60 percent.[99]

Q. HOW CAN YOU EXPLAIN THE LOWER PARTICIPATION IN CALLING PLANS IN NEBRASKA?

A. One reason for lower participation in calling plans in certain markets is that IXCs practice a form of price discrimination known as selective marketing. The natural incentive for

[99] "Residential CVA Study," *U S WEST Communications*, August 1997, p. 34. See also footnote 65 in this testimony.

the IXC is to vary the promotion of its most attractively priced calling plans, from market to market or from consumer to consumer, to match the level of revenue and long distance competition for each market or consumer. Consequently, high revenue callers are more likely to be targeted and offered an attractive pricing plan than low revenue callers, and consumers in states like New York are more likely to be targeted than consumers in Nebraska.

David Dorman, a former Sprint insider and highly respected former CEO of Pacific Bell, has noted that long distance providers are expert practitioners of price discrimination.

> "[p]rice discrimination is increasing in the interLATA market. Under a tactic called 'price up, promote back' the interexchange carriers have gradually increased their retail prices over the last few years, while allowing certain customers to receive discounts.... The result is that the carriers discriminate in favor of certain customers and against many others,... [disguising] the lack of any real price competition among the interexchange carriers."[100]

Q. HOW DO PROMOTIONS AND DISCOUNT PLANS PRICE DISCRIMINATE?

A. First and foremost, the major IXCs, by virtue of the number of customers served, have extensive data that facilitates individual- and market-level selective marketing. In addition, by including a fixed monthly charge or minimum volume commitment for their most aggressively priced plans, IXCs can induce higher volume, higher margin long distance customers to select these plans. Conversely, low volume users are excluded from or do not benefit from these plans. For example, AT&T's One Rate Plus plan offers a flat 10 cent price with a recurring monthly fee of $4.95. Because of the fixed monthly charge, consumers using fewer than one hundred minutes of long distance per month are

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[100]Affidavit of David Dorman In Support of Pacific Telesis Group's Request for a Waiver to Permit It to Provide Interexchange Services to Customers in California, *United States of America v. Western Electric Co., Inc. and American Telephone and Telegraph Company, Civil Action 82-0192*, January 26, 1995, ¶ 14. Witness held senior executive positions at both Pacific Bell and Sprint Corporation.

better off subscribing to a 15 cent flat-rate. Similarly, MCI One customers must spend at least $15, or use 125 minutes per month, to qualify for an alternative 12 cent per minute flat rate, rather than the standard 15 cent price.

But, even among high volume users, a number of customers are excluded from the best calling plans due to the IXCs' selective marketing. The major IXCs often narrowly target their most attractive pricing plans only to those high value customers who have recently changed carriers, leaving the majority of long time loyal customers on inferior discount plans or no plan at all.[101] For example, AT&T's One Rate Plus plan was initially marketed only to a limited number of customers who were believed likely to switch to Sprint's 10 cent plan,[102] and only very recently, more than one year after the calling plan was initiated, has AT&T introduced One Rate Plus in its national advertising campaign. Although IXCs cannot discriminate by refusing to enroll a qualified customer for a particular plan, they can control who are targeted by their marketing campaigns.

Q. WHAT EVIDENCE SUGGESTS THAT IXCS MARKET SELECTIVELY ACROSS GEOGRAPHIC MARKETS?

A. It appears that selective marketing is a key factor behind the low participation rate in long distance calling plans in Nebraska. One way to measure the extent of target marketing is through local advertising.

In theory, all local markets receive a proportional share of national advertising. However, the larger, more attractive markets receive a disproportionally large share of *local*

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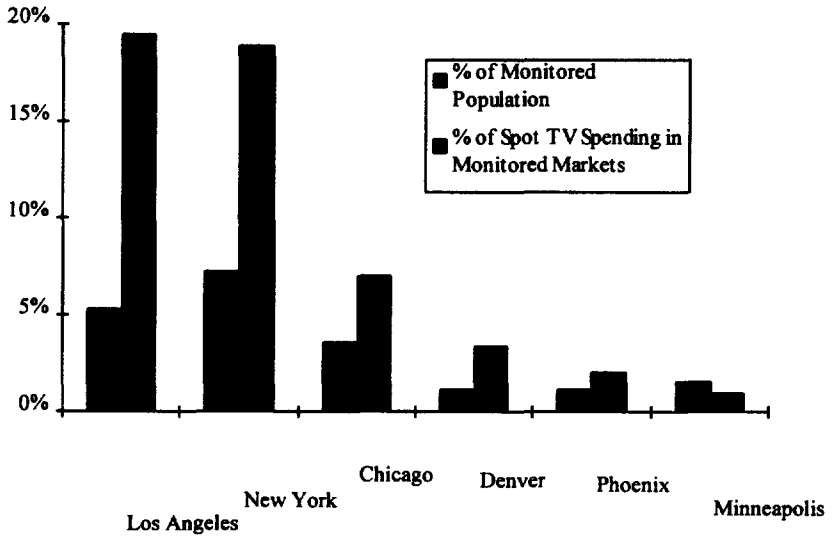
101 According to a study by the United Homeowners Association, 20 percent of high volume users are not on any calling plan. See, Dwight R. Lee, "Charging for Residential Long Distance Service: Who is Paying Too Much" *Prepared for the United Homeowners Association,* July 3, 1997.

102 "Telecommunications: Best Phone Discounts Go to Hardest Bargainers," *Wall Street Journal,* February 13, 1997, p. B1.

advertising spending relative to smaller, more rural markets. For example, in 1997, AT&T spent over $33 million on local spot television advertising in U.S. markets monitored by Competitrack. Almost 40 percent, or about $13 million, of that was spent in either the Los Angeles or New York markets, which represent only 13 percent of the monitored population. Conversely, AT&T spent 0.9 percent of its local TV advertising dollars in the Minneapolis market, a market representing 1.5 percent of the monitored population. (See Figure 7 below). In other words, AT&T spent over six times as much per capita for local spot advertising in Los Angeles as it did in Minneapolis. This evidence clearly shows that AT&T's marketing priorities vary widely across regions and that less urban markets receive a disproportionately smaller share of AT&T's advertising dollars.

Figure 7

Comparison of 1997 Spot TV Advertising by Market for AT&T



Source: Competitrack

Q. WHAT DO YOU CONCLUDE ABOUT THE COMPETITIVENESS OF NEBRASKA'S INTERLATA MARKET?

A. In summary, there is strong evidence that the interLATA market in Nebraska is not fully competitive.

1Nationally, the lack of extensive competition has been recognized by the FCC and the DOJ.

2Prices for tariffed rates have increased, resulting in price increases to the majority of Nebraska consumers who do not or cannot take advantage of discount plans.

3Nebraska has a lower percentage of consumers participating in long distance discount plans and intrastate interLATA prices, net of access charges, are high compared with other states.

4IXCs are targeting discount programs to selected customer segments and geographic markets.

5Given the reduction in the cost of providing service, long distance profit margins are higher than they would be in a fully competitive market.

These characteristics of the long distance market are responsible for sustaining what Qwest CEO and former AT&T President of Consumer Communications Services, Joseph P. Nacchio, calls, "the most profitable business in America, next to importing illegal cocaine."[103]

Q. HOW WOULD U S WEST'S ENTRY IMPACT INTERLATA COMPETITION IN NEBRASKA?

A. U S WEST's entry into the interLATA market in Nebraska would put competitive pressure on the largest IXCs, driving innovation and lower quality-adjusted prices.

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103 "At 7½ Cents a Minute, Who Cares if You Can't Hear a Pin Drop," *Business Week,* December 29, 1997, p. 46.

U S WEST has indicated that it intends to compete aggressively for long distance customers within its service areas, offering prices up to 60 percent below the tariffed rates of the major long distance carriers.[104] This announcement is supported by U S WEST's pricing behavior in long distance markets outside of its region, where U S WEST competes against the major IXCs for small business customers. For example, U S WEST's rates for low volume business customers spending between $25 and $50 per month are 75 percent lower than Sprint's comparable rates. In fact, at 12¢ per minute, U S WEST's rates for these customers are lower than most other competitors. (See Figure 8).

Figure 8
Comparison of interstate interLATA Small Business rates[105]

Company	Per Minute Rate[106]	U S WEST Savings
U S WEST	$0.12	-
Sprint	$0.21	75%
WorldCom	$0.15	25%
Frontier	$0.14	17%
AT&T	$0.1325	10%
MCI , LCI	$0.12	0%

104 "U S WEST Now Ready to Offer Long Distance Service Giving Customers Benefit of One-Stop Shopping and Below-Market Prices Up to 60 percent Less then Competition," *U S WEST Press Release,* February 13, 1998.

105 Rates based on company web site information or fax obtained from customer service representative, June 1998.

106 Rates are for business customers spending $25-49.99 per month, with no term commitment: AT&T One Rate for Business; MCI One for Small Business; Sprint Business Sense; LCI Simply Business; WorldCom Intelenet; Frontier Independence.

Moreover, because U S WEST offers ubiquitous service throughout its service area in Nebraska, U S WEST is in a better position than other entrants to market interLATA services to a much broader range of consumers within its region.

Q. HOW MUCH WOULD NEBRASKA CONSUMERS BENEFIT FROM U S WEST'S ENTRY INTO LONG DISTANCE SERVICE?

A. U S WEST's entry will benefit consumers through a combination of price reductions, increased quality of service and new service offerings. While it is difficult to quantify the benefits from each of these sources, it is instructive to illustrate how a conservatively estimated price decrease leads to significant consumer benefits, even without accounting for the non-price benefits. For example, using a conservative estimate of an average interLATA price reduction in the range of 15 to 20 percent, the benefits to Nebraska consumers of allowing U S WEST into the long distance market would range from $17 to $23 million, or $51 to $69 per access line, per year.[107]

Q. ON WHAT BASIS DO YOU REACH THIS CONCLUSION?

A. As I have illustrated above, there is tremendous room for price reductions in long distance in Nebraska where the majority of consumers are not on any discount plan. At the same time, it is clear from consumer response to the U S WEST-Qwest program that there is significant demand for packaged services. My estimate of the benefits of U S WEST entry do not identify separately the consumer benefits derived from the Buyer's Advantage program (if U S WEST were permitted to resume its alliance with

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[107] The estimate is based on a market size of $109 million in U S WEST's Nebraska service area. This assumes Nebraska accounts for a proportionate share (0.3 percent) of the national residential market size of $38 billion. This proportion is based on U S WEST Residential lines and average interLATA per capita minutes of use for Nebraska. Note that the estimate does not account for variations in interLATA prices across states. Source: Tables 2.3, 2.5, *1996 Statistics of Common Carriers, 1997 FCC's Long Distance Market Share Report*, Tables 10, 11.

Qwest) and Section 271 approval; the estimation is of the total. It is important to emphasize, nonetheless, that the full benefits of Section 271 approval will not be achieved with joint marketing alliances alone. The maximum cost efficiency that U S WEST could achieve, as well as the ability for U S WEST to offer the type of true one-stop shopping that consumers demand, depends on U S WEST's ability to include its own long distance service as part of the package it offers. The estimated 15 to 20 percent price reduction that could occur as a result of U S WEST's entry is consistent with estimates of the SNET experience in Connecticut which is detailed in the following section.

E. INCREASED COMPETITION FOR LOCAL SERVICES

Q. WHAT IMPACT WOULD U S WEST'S LONG DISTANCE ENTRY HAVE ON COMPETITION IN NEBRASKA'S LOCAL MARKETS?

A. The major IXCs have demonstrated that local entry in Nebraska is not a high priority. However, the acquisition of TCG will provide AT&T with access to business customers in Omaha. An important effect of U S WEST's entry into the interLATA market, therefore, is the greater incentive created, particularly for the IXCs, to compete in Nebraska's local markets. In the past, IXCs in Nebraska faced limited competitive pressure in their provision of long distance service, particularly for residences. According to a U S WEST survey, AT&T, MCI and Sprint control 89 percent of the combined residential long distance market in Nebraska.[108] AT&T serves 71 percent of these customers compared to its 63 percent market share nationwide.[109] U S WEST's ability to offer a full range of telecommunications services will enhance its attractiveness

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[108] "Residential CVA Study," *U S WEST Communications,* August 1997, p. 33.

[109] "Long Distance Market Shares First Quarter 1998," *FCC Common Carrier Bureau, Industry Analysis Division,* June 1998, Table 2.2.

as a long distance competitor relative to IXCs that choose not to enter the local exchange in Nebraska. This will create a strong incentive for the major IXCs to respond with comparable service offerings or lower prices to avoid losing a large share of their customers. This is healthy competitive activity that is beneficial to consumers. Thus, entry by U S WEST will create incentives for IXCs to accelerate their plans to enter the local exchange in Nebraska. The Connecticut experience reveals that the results of this incentive can be dramatic.

Q. HOW DID COMPETITION DEVELOP IN CONNECTICUT?

A. Full competition in Connecticut began in mid-1993, when interstate and intrastate long distance markets were opened to competition. At that time, IXCs began providing intrastate toll service and, perhaps more significantly, SNET America, a subsidiary of the incumbent LEC in Connecticut, was allowed to provide interstate long distance service.[110] One year later, SNET America began jointly marketing its long distance services with the local services of its parent company, Southern New England Telephone Company, and added multimedia, wireless, and Internet services, thus creating attractive package of services.

Q. WERE THESE PACKAGES ATTRACTIVE TO SNET'S CUSTOMERS?

A. Yes. At the time that SNET was granted permission to offer bundled services, AT&T controlled 85 percent of the long distance market in Connecticut.[111] As of the end of

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[110] 1993 Annual Report of The Southern New England Telephone Company, p. 3.

[111] Peter Huber, "Local Exchange Competition under the 1996 Telecom Act: Red-lining the Local Residential Customer," November 4, 1997, p. 46.

1996, AT&T's share of residential access lines in Connecticut was 45 percent.[112] By that time, SNET had captured 35 percent of the long distance market in Connecticut and was clearly responsible for a large portion of AT&T's share loss.[113] By January of this year, 34 percent of SNET's local customers had subscribed to SNET's long distance service as well.[114] SNET's success in the long distance market can largely be traced to innovative packaged service offerings. For example, SNET offers a promotion that includes free Internet access minutes for customers who subscribe to local and long distance service from SNET.[115] Even opponents of RBOC entry into long distance have recognized that, all else being equal, these types of packages represent an inherent value to consumers.

> "In view of SNET's success in attracting customers for these packages,... it would appear that consumers place considerable value in 'one-stop shopping' even where there is no actual dollar savings involved."[116]

Q. HOW DID THE IXCS RESPOND TO SNET'S SUCCESS IN THE LONG DISTANCE MARKET?

A. To offer packages of telecommunications service in competition with SNET, the IXCs must include local service, and AT&T and MCI responded to SNET by entering Connecticut's local markets. Prior to the 1996 Act, AT&T announced that it would initiate its local entry in Connecticut. MCI began offering local business service over its

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112 "Long Distance Market Shares: Third Quarter 1997," *FCC Common Carrier Bureau, Industry Analysis Division,* January, 1998, p. 20.

113 Merrill Lynch, "Telecom Services – RBOCs & GTE. Fourth Quarter Review: Defying the Bears Once Again, Reported Robust EPS Growth; Regulatory Cloud Beginning to Lift," February 19, 1997, p. 8.

114 "Telcos Have Captured $870 Million in Bundled Long Distance, Report Says," *Telecom A.M.,* January 8, 1998.

115 "Bell Impact Debated," *Communications Daily,* December 3, 1996, p. 1.

116 Lee L. Selwyn, et al., "The 'Connecticut Experience' With Telecommunications Competition," *Economics and Technology, Inc.,* February 1998.

own facilities in May 1996 and has expanded its network in Connecticut.[117] Competitive entry by these IXCs into Connecticut's local markets is motivated, at least in part, by the competitive threat to their customer bases posed by SNET's entry into long distance. As one Connecticut newspaper reported, "AT&T chose Connecticut for its first major thrust in part because SNET has been so aggressive in going after AT&T's long-distance customers."[118]

Q. WHAT EVIDENCE IS THERE THAT AT&T'S LOCAL ENTRY WAS DRIVEN BY A RESPONSE TO SNET'S LONG DISTANCE ENTRY?

A. AT&T's historical pattern of limited local entry suggests that its entry in Connecticut was a competitive response to SNET's long distance entry. In 1996, AT&T filed for authority to provide local service in all 50 states. By 1997, however, AT&T provided local service state-wide in only one state – Connecticut. AT&T also offers city-wide service in five select cities in four other states: Rochester, NY, Waukegan and Libertyville, Ill., Grand Rapids, Mich., and Sacramento, Ca. In each of these cities, as discussed in Peter Huber's "Telecommunications Competition in Connecticut: A Case Study in Getting it Right,"[119] there is a link between AT&T's entry into the local exchange market and the entry or threat of entry of the local provider into long distance.

- In Rochester, the local incumbent, Rochester Telephone, is not subject to interLATA restrictions and began offering interLATA service in1983. AT&T began offering local service there in January 1995, soon after it was authorized to do so.

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117 K. Donnely, "MCI Celebrates the Anniversary of Connecticut Local Telecommunications," *Business Times - New Haven Connecticut*, May 1997.

118 Peter Huber, "Local Exchange Competition under the 1996 Telecom Act: Red-lining the Local Residential Customer," November 4, 1997, p. 47. Huber is citing S. Higgins, "AT&T Goes Local with Service Today," *New Haven Register*, March 1, 1997, p. A1.

• In April 1995, the Department of Justice announced it would support Ameritech's plan to provide interLATA services in Grand Rapids, Waukegan and Libertyville. One month later, AT&T filed for permission to provide local competition in the same markets.

• Sacramento is served by Pacific Bell. Regulatory developments in California in the mid 1990s created a climate which, at the time, gave the appearance that PacBell would be on a fast track towards entering the long distance market. In 1994, California passed a law that directed California regulators to allow Pacific Bell to compete in intrastate interLATA markets if federal legislation or the MFJ court authorized it.

AT&T's initial local entry strategy aligns with large metropolitan markets and areas where its existing base of long distance customers are at greatest risk, that is, areas where LEC interLATA entry is a reality or appears imminent.

Q. WHAT WAS THE IMPACT OF SNET'S IN-REGION LONG DISTANCE ENTRY ON THE COMPETITIVE ENVIRONMENT OF CONNECTICUT'S INTERLATA MARKET?

A. SNET's entry into long distance resulted in increased competition in the long distance market in Connecticut and lower long distance prices. Since it was granted permission to offer bundled services in April of 1994, SNET introduced aggressive pricing plans that significantly undercut AT&T's prices. According to Professor Jerry Hausman, SNET's prices were, on average, 24 percent below AT&T's standard prices, and 10.6 percent below AT&T's discount plans, saving customers an average of 17.3 percent as of July 1997.[120] Even AT&T's 1997 price cuts and one-rate plans were matched and bettered by SNET. Depending on a customer's monthly calling volume, SNET offers a discount of 10 to 15 percent off the $0.15 per minute price offered by most IXCs. Furthermore,

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[119] Peter Huber, "Telecommunications Competition in Connecticut: A Case Study in Getting it Right," March 27, 1998.

[120] Affidavit of Jerry Hausman in Support of Application by BellSouth for Provision of In-Region, InterLATA Services in Louisiana, *Before the Federal Communications Commission*, November 6, 1997, pp. 11-12.

SNET bills customers in one second increments while AT&T bills using per minute increments. Combining these two factors, Dr. Hausman estimates that SNET's one-rate prices are 17.5 percent lower than AT&T's one-rate prices.[121]

In April, 1996, AT&T petitioned the FCC to allow it to reduce its long-distance rates in Connecticut. AT&T argued that it needed to respond to "the rapidly emerging competition from SNET in Connecticut."[122] MCI made the same request. The Commission denied both requests, because it requires uniform nationwide prices. These requests, however, are a clear indication that the IXCs are willing to lower prices further, wherever competition provides the proper incentives.

AT&T and MCI were allowed to reduce intrastate prices to compete with SNET and did so by reducing long distance prices to 5 cents per minute. In response, SNET further reduced prices; its effective intrastate prices declined by 11 percent, 8 percent, and 5 percent in 1994, 1995, and 1996.[123] SNET also responded with a per-second billing plan, which effectively reduces prices even further.

Q. PLEASE SUMMARIZE HOW U S WEST'S INTERLATA ENTRY WILL HAVE A PRO-COMPETITIVE EFFECT ON THE LOCAL EXCHANGE MARKET

A. As explained above, given the de-integrated structure of the telecom industry and through U S WEST's meeting requirements of Section 271, local exchange markets are open. This has brought direct benefits to many business customers and some residential

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[121] Affidavit of Jerry Hausman in Support of Application by BellSouth for Provision of In-Region, InterLATA Services in Louisiana, *Before the Federal Communications Commission*, November 6, 1997, p. 13.

[122] Peter Huber, "Local Exchange Competition under the 1996 Telecom Act: Red-lining the Local Residential Customer," November 4, 1997, p. 48. Huber is citing AT&T Corporation's Petition for Reconsideration at 2, Policy and Rules Concerning the Interstate, Interexchange Marketplace, CC Docket No. 96-61, Filed with the FCC April 19, 1996.

[123] SNET 1995 and 1996 Annual Reports.

customers in Nebraska, especially in the Omaha area. The openness of local exchange markets in Nebraska, together with the regulatory safeguards of Section 272 of the Act, ensure that U S WEST's entry into the interLATA market will not harm competition. To the contrary, U S WEST's interLATA entry will serve to speed up entry by the IXCs, increasing competition in areas where local entry has already occurred, namely Omaha, and increasing the incentive for long distance carriers to begin offering packages of local and long distance service in the other rural areas of Nebraska that U S WEST serves.

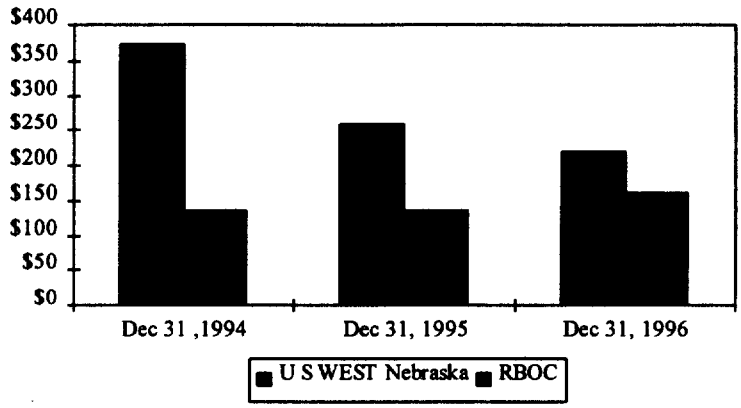
Q. WHAT ARE THE IMPLICATIONS OF U S WEST ENTRY INTO LONG DISTANCE ON TELECOMMUNICATIONS INVESTMENT IN NEBRASKA?

A. Through its investment in the telecommunications infrastructure in Nebraska, U S WEST has demonstrated that it is committed to providing Nebraska consumers with the telecommunications services they demand. Since 1986, U S WEST has invested over $1.2 billion in telecommunications services in Nebraska. On a per line basis, U S WEST's 1996 investment of $1,345 in Nebraska exceeds the nationwide RBOC average of $994.[124] Moreover, as shown in Figure 9, U S WEST's annual investment per line in Nebraska has been consistently higher than the RBOC average over the last few years.

Figure 9

[124] *1994-1996 FCC Statistics of Common Communications Carriers*, Table 2.9 - Statistics of Reporting Carriers, Line #97; *U S WEST internal data, Nebraska Financial Summary*, October 6, 1997.

US West Nebraska vs. Average RBOC
Plant added per Line 1994-1996



Sources: FCC Statistics of Common Communications Carriers, Table 2.7, Communications Plant of Reporting Carriers, Account #210, 1994, 1995, 1996; U S WEST internal data, Nebraska Financial Summary, March, 1998.

This investment has increased access for Nebraska consumers to advanced telecommunications services, as the following evidence indicates:

1 With few exceptions, all central offices in the state are now digital, growing from just over 50 percent in 1990 to 99 percent in 1997.[125]

2 U S WEST, as part of a collaborative effort among the state's LECs and the State Division of communications, built the nation's first statewide frame relay network for high-speed data transmission.[126]

3 U S WEST offers Omaha's first high-speed residential Internet service via its Telechoice OnLine cable modem service.[127]

4 U S WEST has launched a range of "MegaBit" services utilizing RADSL (Rate Adaptive Digital Subscriber Line) technology in Omaha. RADSL offers continuous

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[125] "A State Wide Information Technology Infrastructure Planning Process," Nebraska Information Technology Commission, June 1998, p. 17.

[126] "Nebraska Scores a Frame Relay First," Telephony, February 1, 1993, p. 42-46.

[127] "U S WEST TeleChoice OnLine," Downloaded from U S WEST's website on June 19,1998, <http://www.uswtelechoice.com/>.

access to high speed digital applications for residential and business customers, such as telecommuting, Internet access, videoconferencing, and distance learning.[128]

5U S WEST has been an active participant in creating a video network that community organizations use for meetings, hearings, and training sessions, using T-1 lines.

The continued ability and incentive for U S WEST to invest in Nebraska depends on its ability to compete for the full range of telecommunications services. Currently, consumers and businesses that would consider choosing U S WEST for the provision of services that are derived from these investments would have to choose an additional provider to carry these same services across LATAs. This restriction significantly limits the range of services U S WEST can deliver and the potential for a key source of revenues needed to recover these investments.

V. REGULATORY SAFEGUARDS

A. CONSIDERATION OF ANTICOMPETITIVE BEHAVIOR

Q. DO YOU BELIEVE U S WEST WOULD ENGAGE IN ANTICOMPETITIVE BEHAVIOR IF ALLOWED TO PARTICIPATE IN LOCAL AND INTERLATA MARKETS?

A. No. The competitive environment, along with the regulatory safeguards in place are sufficient to ensure that U S WEST cannot engage in anticompetitive behavior. Moreover, the intraLATA toll and wireless markets, which have the same kind of vertical relationship to access services as interLATA service, show no signs of discrimination, cross-subsidies or other anticompetitive conduct by U S WEST. The combination of

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[128]"Network Disclosure Announcement #394," Downloaded from U S WEST's website on June 19, 1998, <http://www.uswest.com/com/disclosures/netdisclosure394.html>; and "FAQs," Downloaded from U S WEST's Website on June 19,1998, <http://www.uswest.com/com/customers/interprise/dsl/faq.html#What is MegaBit Services>.

competition in access services and regulatory oversight has prevented vertical leveraging. For the same reasons – access competition plus regulatory safeguards – there will be no discrimination or anticompetitive conduct if U S WEST is allowed to offer interLATA services.

Q. WHAT IS THE ECONOMIC MEANING OF ANTICOMPETITIVE BEHAVIOR?

A. Anticompetitive behavior results in consumers paying higher prices or obtaining lower quality service. It is important to make the distinction between business conduct that harms competition and conduct that might harm competitors. The safeguards in Section 271 of the Act are aimed at identifying and precluding behavior that harms competition. As the FCC noted, when assessing an application for interLATA authority under Section 271, it is important "not to seek to protect particular entrenched competitors or to preserve tranquillity at the expense of promoting competition."[129] The danger is that it is easy to confuse protecting competitors with protecting competition. In some cases, "In trying to create level playing fields, the agencies have been protecting competitors."[130]

Q. CAN YOU DISTINGUISH BETWEEN HARM TO COMPETITION AND HARM TO COMPETITORS?

A. In antitrust language, quality-adjusted prices must increase or supply must be reduced in a relevant market for conduct to be considered anti-competitive. In a competitive market some firms suffer while others gain competitive advantages and prosper. Entry into a market by a highly efficient firm is likely to attract market share from incumbents. This

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[129] Reply Comments of the Federal Communications Commission as Amicus Curiae on the Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment, Civil Action 82-0192, May 22, 1987.

[130] Michael W. Klass and Michael A. Salinger, "Do New Theories of Vertical Foreclosure Provide Sound Guidance for Consent Agreements in Vertical Merger Cases?" *Antitrust Bulletin*, Fall 1995, p. 694.

harms existing competitors, but enhances the positive attributes of competition. Similarly, expansion of a highly efficient incumbent may enhance economic welfare even if it prevents entry of new competitors. Classic strategies that are likely to promote economic welfare include producing a superior product, providing superior information or service to customers, and offering a better price. These strategies clearly advance social welfare, as well as private interests by increasing the value to consumers of the product relative to its price. Therefore, to assess whether U S WEST's proposed entry is on balance anticompetitive or procompetitive, we must focus on the likely economic impacts of entry on *consumers* in terms of quality-adjusted prices.

Q. IS IT LIKELY THAT U S WEST COULD HARM COMPETITION IN THE INTERLATA MARKET?

A. No. It is not likely that U S WEST could harm competition in the interLATA market. A key reason is that U S WEST's entry into long distance represents *de novo* expansion. Even though U S WEST would be a major supplier to its long distance competitors, providing them with access to the local network, U S WEST would have zero interLATA market share and, therefore, no market power in the long distance market. For this reason, it is uncommon for antitrust authorities to challenge the *de novo* expansion of a firm into a related market.

B. LITTLE TO NO POTENTIAL EXISTS FOR U S WEST'S ENTRY TO HARM COMPETITION FOR LONG DISTANCE SERVICE

1. Introduction

Q. WHAT IS THE THEORETICAL POTENTIAL FOR HARM IF U S WEST IS GRANTED PERMISSION TO OFFER LONG DISTANCE SERVICE?

A. An incumbent LEC such as U S WEST is the dominant supplier of local exchange service, and it is the primary means of access to the local network, which is used in the provision of long distance service. Opponents to RBOC long distance entry claim that U S WEST could exploit its position in the local market to impede competition.[131] The response to this concern is found in the answers to the following questions. Could U S WEST force its long distance competitors to exit the market through predatory pricing? Can U S WEST use its position as the leading supplier of access services to disadvantage its long distance competitors relative to its own long distance affiliate by providing inferior services? And, can U S WEST shift costs to its regulated services to cross-subsidize its interLATA subsidiary?

I discuss the prospects for each of these types of anti-competitive behavior in turn. I conclude that the risk of U S WEST engaging in anti-competitive behavior is negligible. This conclusion is based on current or anticipated marketplace conditions, lack of evidence of such behavior by U S WEST in analogous circumstances, and the existence of regulatory safeguards. Furthermore, as discussed in Section IV, the benefits to consumers of allowing U S WEST to enter the market for long distance service are considerable.

2. Predatory Pricing

Q. PLEASE EXPLAIN THE CONCEPT OF PREDATORY PRICING.

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131 See, for example, B. Douglas Bernheim and Robert D. Willig, "Appropriate Preconditions for Removal of the InterLATA Restrictions on the RBOCs," *Affidavit filed with the United States Department of Justice in support of AT&T's Opposition to U S WEST's Motions for "Permanent" and "Temporary" Waivers from the Interexchange Restriction of the Decree (D.D.C.)* Case No. 82-0192 (Feb. 15, 1994). (Hereinafter, "Bernheim and Willig").

A. Predatory pricing is a strategic tactic of dubious value. In theory a firm could price below cost in an attempt to force its competitors to exit the market, and then subsequently raise its price to a supracompetitive level, achieving monopoly profits. Such a strategy entails foregoing profits in the short run in the hope of increasing future profits. Although there are various forms of predatory strategies,[132] for a strategy to be successful, the predator must be large enough or have sufficient financial backing to withstand losses for a longer period of time than its competitors. Reentry must also be sufficiently costly that the predator can price high enough in the future to recoup its losses without attracting its competitors back into the market.

Q. IS PREDATORY PRICING EVER A VIABLE STRATEGY?

A. Recent court cases have made clear that predatory pricing seldom makes economic sense. The Supreme Court observed in the case of *Matsushita Electric* that "there is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful."[133] The Court took the position that, "[f]or the investment to be rational, the [predator] must have a reasonable expectation of recovering, in the form of later monopoly profits, more than the losses suffered."[134]

It is highly unlikely in this case that U S WEST can force competitors to exit the long distance market. At least three full facilities-based competitors and a host of smaller firms supply long distance service. As Figure 10 shows, the leading IXCs are not small, vulnerable companies, but major firms, such as AT&T and MCI, whose assets and

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[132] For a more detailed discussion of predatory pricing strategies, see the Affidavit of D. John Roberts in Support of Application by BellSouth for Provision of In-Region, InterLATA Services in Louisiana, *Before the Federal Communications Commission*, November 6, 1997.

[133] Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 589 (1986). Also see Kenneth Elzinga & David Mills, *The Recoupment Standard in Brooke Group,* 62 ANTITRUST L.J. 562 (1994).

[134] Matsushita *op cit.*, pp. 588-589.

revenues exceed those of U S WEST. In addition, the assets involved in the provision of long distance service are largely sunk, making it exceedingly unlikely that U S WEST could force these competitors to exit the market. Moreover, even if a long distance supplier did exit the market, its network assets would be available to a new competitor. Thus, any attempted predation by U S WEST would incur large costs with little prospect of success.

Figure 10

Market Capitalization and Total Revenue for U S WEST and the Largest IXCs

	Company	Market Capitalization	Total Revenue[135]
	AT&T	$107.1 billion	$52.4 billion
	MCI-WorldCom	$27.8 + 39.4 billion	$19.7 + 7.4 billion
	Sprint	$25.3 billion[136]	$14.9 billion
	U S WEST	$26.9 billion	$10.3 billion

Source: Market Guide, March, 1998; Company Financial Statements

3. Discrimination Against Long Distance Competitors

Q. HOW MIGHT U S WEST DISCRIMINATE AGAINST ITS LONG DISTANCE COMPETITORS?

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[135] These numbers are 1997 sales for the 12 month period ending December 31, 1997 from company Income Statements.

[136] France Telecom and Deutsche Telekom together own 20 percent of Sprint voting stock as a result of the completion of the spin-off of Sprint's cellular business. (Sprint 1995 Annual Report, p. 54). France Telecom and Deutsche Telekom have market capitalizations of $50.2 billion and $60.5 billion respectively.

A. U S WEST is a supplier of inputs used in the provision of long distance service. Harm might result, therefore, if U S WEST were interested in and able to discriminate in favor of its long distance subsidiary in supplying these inputs. Opponents to RBOC entry[137] point to the potential for an RBOC to foreclose access services to long distance rivals or, more generally, to decrease the quality of the services provided to IXCs.

I believe that it is highly unlikely that U S WEST would or could engage in this type of discrimination, for the reasons I discuss below. I further believe that even if U S WEST did have such an incentive or ability, it is unlikely that it could engage in this type of behavior without detection and punishment by regulatory and antitrust authorities.

Q. CAN U S WEST FORECLOSE ACCESS SERVICES TO LONG DISTANCE RIVALS?

A. No. U S WEST cannot foreclose access services to long distance rivals. Foreclosure would involve preventing long distance carriers from having access to customers. Regulation prohibits discrimination in providing access services. In particular, under the Telecommunications Act and FCC regulations, U S WEST is required to provide non-discriminatory access to all IXCs. If U S WEST attempted foreclosure, it would be immediately obvious to regulators. Foreclosure is, therefore, not possible, and only the potential for less drastic forms of anticompetitive discrimination need to be considered.

Q. WHAT IS THE POTENTIAL FOR U S WEST TO ENGAGE IN PRICE OR QUALITY DISCRIMINATION AGAINST ITS RIVALS?

A. There is minimal potential for U S WEST to engage in price or quality discrimination against its rivals. Exhibit RGH-4 lists the key safeguards of the Act that ensure that

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137 See, for example, Bernheim and Willig, *op. cit.*.

RBOC interexchange entry will not result in discrimination. Section 272 of the Act prohibits discrimination by U S WEST against unaffiliated long distance providers in the provision of services, facilities, and information; establishes standards; and requires these services to be rendered in a timely manner. According to the Act, U S WEST must offer IXC competitors, on the same terms and conditions, any intraLATA facilities used by U S WEST's interLATA affiliate, and U S WEST must charge its long distance affiliate the same amount it charges other providers for access to its telephone exchange services.

Q. WHAT HAS BEEN THE MAIN CONCERN BY OPPONENTS TO RBOC ENTRY WITH REGARD TO DISCRIMINATION?

A. Opponents of RBOC entry into long distance service claim that RBOCs can discriminate directly against IXCs competing with its long distance affiliate by manipulating the quality of access service; for example, lowering the quality of the access service offered to IXCs vis-à-vis that offered to its own affiliate.

These hypothetical arguments are without merit. Discrimination in the quality of access services through manipulation of the switch processor, switched transport, dedicated transport, traffic routing, or other physical facilities is unfeasible. Such discrimination would involve modifications of internal software and systems and would require the cooperation of vendors and U S WEST's own workers, coordinated across several departments. These types of internal modifications are not only difficult or impossible to achieve without affecting the quality of U S WEST's own services, but generally would be easily detectable.

Q. WOULD U S WEST BE SUBJECT TO PUNISHMENTS FOR UNSATISFACTORY PERFORMANCE?

A. Yes. If U S WEST deviated from its own past performance in the provision of access services or the performance of the other four RBOCs, the FCC could easily identify the aberrant behavior and issue the appropriate punishment, which could include withdrawal of interLATA authority. The idea that discriminatory behavior on the part of a single RBOC, in this case U S WEST, would go unnoticed by the FCC and all nationwide purchasers of access is implausible.

The long distance carriers have been receiving exchange access from the RBOCs for well over a decade. During this time, these IXCs have closely monitored the quality of the access services they receive. For example, AT&T issues quality report cards to U S WEST in all of its states, tracking service quality performance of access as well as other services. Any consistent pattern of deviation in access quality from the last fourteen years of receiving access services from the RBOCs would be immediately recognized by the IXCs, and used to bring about action by regulators.

C. EVIDENCE FROM OTHER DOWNSTREAM MARKETS WITH LEC COMPETITION

Q. ARE THERE DOWNSTREAM MARKETS IN WHICH LOCAL EXCHANGE PROVIDERS CURRENTLY COMPETE?

A. Yes. There are several examples available to demonstrate that vertical relationships do not lead to anti-competitive behavior. First, there are several independent local exchange providers in the US, most notably GTE, Sprint, and SNET, that are currently providing interLATA service. The behavior of these LECs indicates no pattern of discrimination. Second, most of the RBOCs, including U S WEST, compete for wireless and/or intraLATA toll. As with interLATA service, these services rely on access to the local exchange network. The behavior of local exchange providers in these markets, therefore,

provides insight into expected behavior by U S WEST as an interLATA service competitor.

Q. WHAT WAS THE EXPERIENCE OF GTE AS AN INTEGRATED PROVIDER?

A. GTE owned Sprint between 1983 and 1986. Then a diversified local exchange company and the third largest IXC, GTE gradually divested its ownership of Sprint, selling shares to United Telecom in 1986, 1988, and 1992. During this period, GTE would have had the same kind of incentives to discriminate against the other IXCs that it is argued RBOCs would have if allowed to enter long distance now. An empirical examination of interstate long distance quantities and prices by Fred McChesney, however, does not find any evidence of discrimination effects caused by GTE's ownership of Sprint.[138] Specifically, McChesney found that GTE's ownership of Sprint did not lead to a statistically significant increase in the price of interstate long distance, as measured by the Message Telephone Service Consumer Price Index, nor did it lead to a statistically significant decrease in the quantity of interstate long distance, as measured by the total quarterly interstate switched access minutes.

Q. WHAT WAS THE EXPERIENCE OF SPRINT SUBSEQUENT TO BEING DIVESTED BY GTE?

A. Sprint was acquired by United Telecom, and the combined company now provides local exchange and long distance service in 19 states. From a competitive viewpoint, U S WEST would be identical to Sprint in these areas if allowed into long distance. Consequently, if quality discrimination is a reasonable expectation, I would expect it in

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138 Fred S. McChesney, "Empirical Tests of the Cross-subsidy and Discriminatory-access Hypotheses in Vertically Integrated Telephony," *Managerial and Decision Economics*, Vol. 16, 493-505, 1995. See also *Affidavit of Fred S. McChesney in Support of the Motion of Bell Atlantic Corp., BellSouth Corp., Nynex Corp., and Southwestern Bell Corp., to Vacate the Decree*, Civil Action No. 82-0192 (HHG), July 6, 1994.

those areas where Sprint is an integrated provider of access and interexchange services. Based on a limited survey of state commissions in Sprint's 19 state service areas, LECG found no indication that complaints of discrimination have been raised by the other IXCs against Sprint.

Q. WHAT OTHER EVIDENCE SHEDS LIGHT ON THE COMPETITIVE BEHAVIOR OF LECS ENTERING LONG DISTANCE?

A. In addition to Sprint, at least two other large local exchange companies, GTE and SNET, have expanded *de novo* into long distance service. I have found no evidence to date that indicates that these LECs have acted to manipulate quality to reduce competition in the long distance market.

Proving the non-existence of a phenomenon is all but impossible. However, sample data is instructive. LECG conducted a limited survey of the Connecticut and various other public utility commissions and found no pattern of discriminatory or anticompetitive behavior on the part of SNET or GTE.[139] In fact, as I discussed in Section III for the case of SNET, the pro-competitive benefits of LEC entry into long distance have been substantial.

Q. WOULD THE PROVISION OF WIRELESS SERVICES BY A LOCAL EXCHANGE CARRIER RAISE THE SAME POTENTIAL ISSUES REGARDING DISCRIMINATION?

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139 Out of the fifteen states responding to the survey, I found one instance of discriminatory behavior on the part of GTE. See Order on Rehearing, PUC Docket No. 15711, June 24, 1997. In that decision, the Texas Commission found that pricing practices on the part of GTE's long distance subsidiary violated arm's length regulations, allowing its long distance subsidiary to offer discounted intraLATA toll service as part of a bundled package, without attributing these discounts for the purpose of establishing wholesale rates.

A. Yes. The provision of cellular service is another situation in which the potential exists for quality discrimination by an ILEC in favor of its separate cellular affiliate. Wireless competitors are dependent on the ILEC to provide interconnection to the LEC's local exchange network and to provide transport to and from cell sites, switches, and IXC points of presence.

Q. IS THERE ANY EVIDENCE OF THE ILECS' BEHAVIOR IN THE PROVISION OF CELLULAR SERVICE THROUGH AN AFFILIATE?

A. Yes. A 1994 study by Dr. Richard Schmalensee examined the impact of LEC affiliation on the wireline cellular operator's market share.[140] His results indicate that the wireline cellular operator's market share is not affected by whether that operator is owned or affiliated with the incumbent LEC in that market, providing further evidence of the lack of discrimination in cellular by LECs. In 1997, Drs. John C. Panzar and Richard J. Gilbert confirmed those results through a similar study.[141]

Further evidence that U S WEST is unlikely to be in a position to abuse its control of the access network by discriminating in the provision of a related service comes from the FCC's recent elimination of the separate affiliate requirements for RBOC provision of wireless services. The FCC relaxed its affiliate rules upon finding that any potential for discrimination could be dealt with through "less stringent" regulatory requirements.[142] If the RBOCs had consistently exhibited a pattern of anticompetitive or discriminatory

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140 Affidavit of Richard Schmalensee, *Motion of Bell Atlantic Corp., BellSouth Corp., Nynex Corp., and Southwestern Bell Corp., to Vacate the Decree.* Civil Action No. 82-0192 (HHG), July 6, 1994, pp. 20-23.

141 Joint Affidavit of Richard J. Gilbert and John C. Panzar on behalf of Ameritech, *In the Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide InterLATA Service Originating in Michigan, CC Docket No. 97-137,* May 21, 1997, p. 21.

142 Order *In the Matter of Amendment of the Commission's Rules to Establish Competitive Service Safeguards for Local Exchange Carrier Provision of Commercial Mobile Radio Services,* WT Docket No. 96-162, rel. October 3, 1997.

behavior in the provision of access to competitive wireless service providers, it is unlikely that the FCC would have reached this conclusion.

Q. DOES THE STATE OF NEBRASKA PERMIT COMPETITION IN THE PROVISION OF INTRALATA TOLL SERVICE?

A. Yes. U S WEST Nebraska has been facing increasing competition in its intraLATA markets, largely from the IXCs. Competitors have been competing with U S WEST for intraLATA toll through dial-around for several years. U S WEST is not required to provide intraLATA service through a separate subsidiary.

Q. IS THERE EVIDENCE OF DISCRIMINATION IN INTRALATA TOLL SERVICE BY U S WEST?

A. No. The provision of intraLATA interexchange service is essentially the same as the provision of interLATA interexchange service. If U S WEST has the incentive and the ability to discriminate against competitors in the provision of interLATA service, I would expect to see evidence of this discrimination in the provision of intraLATA service. But I do not. Dial-around competition has been growing steadily in Nebraska since the early 1990s. As of the end of 1997, competitors have secured 28 percent of the measurable intraLATA switched long distance minutes-of-use in Nebraska.[143] This consistent growth of competitors' intraLATA toll minutes-of-use is difficult to reconcile with hypotheses of discrimination.[144]

VI. CONCLUSION

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[143] U S WEST internal data.

[144] These market share losses have occurred without intraLATA toll dialing parity implementation; the Telecommunications Act requires dialing parity to be implemented only after 271 authority has been granted. Without intraLATA toll dialing parity market share losses are primarily from the use of dedicated facilities or customer dial-around.

Q. CAN YOU PLEASE SUMMARIZE YOUR TESTIMONY?

A. In conclusion, I recommend that the Nebraska Public Service Commission support U S WEST's request to enter the interexchange market. I base this recommendation upon reaching the following conclusions: (1) local exchange markets in Nebraska are open to competition; (2) U S WEST will inject valuable added competition into the interLATA market – it will be an efficient provider of interLATA services, it will offer a full range of toll services, and it will have a well-known brand name; and (3) there is no substantial possibility that U S WEST's entry into the interLATA market will *harm* interLATA competition. U S WEST's entry into the long distance market is an important step towards promoting competition in all telecommunications markets and will bring the benefits of a wider range of communications and information services to the consumers and businesses of Nebraska.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

CERTIFICATE OF SERVICE

I, Rebecca Ward, do hereby certify that on this 26th day of October, 1998, I have caused a copy of the foregoing **SUPPLEMENTAL COMMENTS AND SUBMISSIONS OF U S WEST COMMUNICATIONS, INC.** to be served, via hand delivery, upon the persons listed on the attached service list.

Rebecca Ward

Rebecca Ward

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